

SOUTHERN HOUSTON STUDY



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Overview	5
Population.....	6
Development Issues	6
Development Potential.....	6
Table 1: Potential Population, Employment and Cumulative Tax Revenue for the Combined Micro-Areas in Southern Houston under Two Scenarios.....	7
Strategies	7
PART I: STUDY AREA OVERVIEW	9
Approach	9
The Study Area	10
Study Area Boundaries and Methodology.....	10
Key Characteristics.....	11
Issues	11
Map: Southern Houston Study: Overview	13
Growth and Development Potential – Cost/Revenue Analysis.....	15
Approach and Methodology	15
Findings.....	18
Table 2: Potential Population Growth in ‘Micro Areas’	18
Conclusions and Recommendations	21
PART II: EXISTING CONDITIONS.....	24
Land Use and Development.....	24
Residential Uses	24
Commercial, Office, Public and Institutional Uses	25
Commercial, Office, Public and Institutional Trends	25
Industrial Uses	26
Parks and Open Space	27
Legal Restrictions on the Use of land.....	27
Aviation Related Restrictions	27
Deed Restrictions.....	28
Property Ownership and Land Value.....	28
Housing and Neighborhoods	28
Dangerous Buildings	30
Population.....	30
Socioeconomic Characteristics and Trends	30
Table 7-a: Southern Sector Study: Population and Ethnicity.....	31
Total Population and Hispanic Population, 1990-2000	31
Table 7-b: Southern Sector Study: Population and Ethnicity	32
Non-Hispanic White and Black Population, 1990-2000.....	32
Table 7-c: Southern Sector Study: Population and Ethnicity.....	33
Non-Hispanic Asian Population and Others, 1990-2000.....	33
Economic Conditions	34
Infrastructure	34
Transportation: Regional Mobility	34
Table 8: Economic Conditions, 1990, 1993, and 1995	35
Transportation: Local Mobility.....	36
Water Supply, Wastewater and Storm Drainage	37
Environmental Conditions	37
Community Organization and Services	39
Table 9: Super Neighborhood’s in Southern Houston Sector	40
Facility Recommendations	40
PART III: ANTICIPATED FUTURE DEVELOPMENT AND RECOMMENDATIONS.....	42
Recommendations	45
New Development/Redevelopment	46
Land Use.....	46
Industrial Development	46
Commercial Corridor Development	48

Accessibility and Infrastructure	49
Environmental Constraints	49
Neighborhood Conservation and Improvement	50
PART IV: COST AND REVENUE ANALYSIS FOR SELECTED MICRO-AREA ECONOMIC DEVELOPMENT	51
Study Areas	51
General assumptions	52
Holmes Micro-Area	53
Area character and trends	53
Projected Growth Scenarios	54
Mykawa Micro-Area	54
Area Character and Trends	54
Table 10: Holmes Micro-Area Potential Growth Summary (in units or millions of square feet)	55
Projected Growth Scenarios	55
Table 11: Mykawa Micro-Area Potential Growth Summary (in units or millions of square feet)	56
Cullen Micro-Area	56
Area Characters and Trends	56
Projected Growth Scenarios	57
Table 12: Cullen Micro-Area Potential Growth Summary (in units or millions of square feet)	58
Telephone/Bellfort Micro-Area	58
Area character and trends	58
Projected Growth Scenarios	58
Table 13: Telephone/Bellfort Micro-Area Potential Growth Summary (in units or millions of square feet)	59
Revenue estimates	59
General assumptions	59
Holmes Micro-Area	60
Mykawa Micro-Area	60
Cullen Micro-Area	60
Telephone-Bellfort Micro-Area	60
Table 14: Potential Tax Revenues (In million of dollars) for the Micro-Areas	61
Holmes Road	61
Infrastructure cost estimates	61
General Assumptions	62
Holmes Micro-Area	62
Mykawa Micro-Area	62
Cullen Micro-Area	62
Telephone Micro-Area	63
Table 15: Estimated Infrastructure Costs	63
Table 16: Additional infrastructure costs (in millions)	64
Expansion of the Sims Bayou Treatment Plant	64
Appendix A: Super Neighborhood Data	65
Appendix B: Methodology for Cost/Revenue Analysis	67
Objective and Overview	67
Projections of land use, population and employment	67
Employment	68
Population	69
Revenues	69
Costs	69
Appendix C. Projected Population, Employment, Land Uses,	70
Revenues and Costs by Micro Area	70
Holmes Road Micro-Area	70
Table C1: Holmes Micro-Area Growth Summary: In Units and Square Feet (sf) of Built Space	70
Table C2: Developed and Undeveloped Land (sf) and Number of Housing Units, 1999 Holmes Micro-Area	70

Population.....	71
B. Scenario 2 Projections.....	72
Table C3: Holmes Micro-Area: Projection of Number of Employees by Land Use, 2020	72
Table C4: Apportionment of Undeveloped Land by Land Uses, 2020.....	72
Table C5: Employment by TAZ, 1990, 1999 and 2020.....	73
Mykawa Road Micro-Area.....	73
Table C7: Mykawa Micro-Area, Developed and.....	74
Undeveloped Land (sf) and Number of	74
Housing Units, 1999	74
A. Scenario 1	74
Table C8: Land Uses, New Building Square Footage Added by 2020.....	75
B. Scenario 2.....	75
Table C9: Mykawa Micro-Area: Projection of Number of Employees by Land Use, 2020.....	75
Table C10: Apportionment of Undeveloped Land, 2020.....	76
Table C11: Population by TAZ, 1990, 1999 and 2020.....	76
Table C12: Mykawa Micro-Area: Employment by TAZ 1990, 1999 and 2020.....	77
Cullen Blvd. Micro-Area.....	77
Table C13: Cullen Micro-Area Growth Summary: In Units and Square.....	77
Feet of Built Space.....	77
Land Use	77
Population.....	77
Table C14: Developed and Undeveloped land (in sq. ft.), 1999.....	78
Industrial.....	78
A. Scenario 1	78
Population projection was based on TAZ figures for 2020: 46,568 (see table C7).	78
Table C15: Population Assumptions	78
Table C16: Employment Assumptions	78
sf/Employee	78
Vacancy Rate	78
B. Scenario 2.....	79
Table C17: Population and Employment Increase Rate for Harris County	79
and Cullen Micro-Area (1990-2020), by zones	79
Table C18: Projected Future Land Use using a Modified Land-use Scenario,	79
2020	79
Table C19: Cullen Blvd. Micro-Area: Household Population by Traffic Analysis	80
Zones (TAZ), 1990, 1999 and 2020	80
Telephone/Bellfort Micro-Area.....	80
Table C20: Telephone/Bellfort Micro-Area Growth Summary (units or millions.....	81
of sf).....	81
Table C21: Land Use Distribution: Telephone Road, 1999.....	81
Table C22: Telephone Road 1999 Base.....	82
Population:.....	82
2. Population and Employment Projections: Telephone/Bellfort Micro Area	82
Table C23: Population Assumptions	82
Table C24: Employment Assumptions.....	83
Table C25: Telephone Road: 1999 Employment.....	83
Table C26: Developable Land (sf), Telephone Road 1999.....	83
Table C27: Build Up Scenario, Telephone Road.....	84
Table C28: Scenario 2 Projected Population and Employment, Telephone Road, 2020	84
Table C29: Developable Land (sf), Belfort Road 1999	84
Table C30: Base-Line Population,	85
Belfort Road 1999.....	85
Table C31: Population Assumptions,	85
Belfort Road	85
Table C32: Total Build Up Scenario in non-infill areas, Belfort Road.....	85
Table C33: Scenario 2 Projected Population and Employment, Belfort Road,.....	86

2020	86
Table C34: Employment by Traffic Analysis Zones (TAZ),	86
1990, 1999 and 2020.....	86
APPENDIX D: Revenue Analysis.....	87
APPENDIX E: Infrastructure Costs	90
1. Holmes Micro-Area	90
Table E1: Estimated Cost of Constructing Waterlines, Holmes Micro-Area	90
Table E2: Storm Water Lines Needed, Holmes Micro-Area	90
Table E3: Estimated Cost of Building Waste Water Lines, Holmes Micro-Area.....	90
Table E4: Estimated Cost of Building Roads, Holmes Micro-Area	90
2. Mykawa Micro-Area	91
3. Cullen Micro-Area.....	91
Table E6: Estimated Cost of Building Water Lines, Cullen Micro-Area	91
Table E7: Estimated Cost of Building Waste Water Lines, Cullen Micro-Area	91
Table E8: Estimated Cost of Building Roads, Cullen and Mykawa Micro-Areas.....	91
APPENDIX F: Micro-Areas Population and Employment Shares in the Houston Metropolitan Area	94
Information Sources	96

Executive Summary

For decades the lack of coherent road and utility systems in the southern part of the City of Houston has frustrated the development of large tracts of undeveloped and underdeveloped land. This lack of necessary infrastructure, in turn, encouraged the leap-frog development of raw land in Fort Bend and Brazoria Counties, contributed to urban sprawl and eroded the tax base of the City of Houston. Private investment moved beyond the existing communities in much of Houston's south sector, leading to continuing decline. The Southern Houston Sector Study is designed to provide Houstonians with information about conditions in this part of our City, identify development potential in this under-used area, and formulate a long-range strategy to stimulate new investment.

New investment (both public and private) in the South Sector would simultaneously address a number of problems and benefit the City of Houston. Property owners in the South Sector would benefit directly from an increase in local property values. Residents would benefit from a more attractive environment, greater access to shopping, recreation, and employment, and the removal of environmental hazards. Houston tax -payers would benefit from increased tax collections from the enhanced communities, and greater efficiency in the delivery of city services. All residents of the Houston area would benefit from the reduction in urban sprawl that the in-fill of such a large area would accomplish. Drive times and air pollution will be lower if, instead of consuming raw land on the far edge of our urban area, the South Sector can be successfully developed.

Overview

The Southern Houston Sector Study area is bound by Loop 610 on the north, City boundaries on the south and east, and US 90A (South Main) on the west. It includes approximately 117 square miles, of which about 50 square miles are undeveloped. By comparison, the study area is similar in size to Atlanta, while the undeveloped areas are comparable in size to Boston or San Francisco.

The area has good highway connections, especially since the completion of the Beltway 8. It is served by freight rail in its eastern, western and central sections. It is also the location of two major airports, Hobby airport and Ellington Field. Major employment centers (Texas Medical Center and the Port of Houston) are immediately adjacent to the study area. Other major employment centers are easily accessible using relatively uncongested routes.

Population

The population was 318,300 in 2000, growing at a rate of 1.3 percent per year since 1990. The gross density for the entire area is approximately 2,700 people per square mile. By and large, the sector is underdeveloped.

Development Issues

The availability of land with ready access to the city's major activity centers should be a recipe for rapid development. Five major issues affect the development of the study area and must be addressed.

1. *Accessibility.* Although the area has excellent freeway and highway connections, many major thoroughfares are discontinuous, resulting in poor access to specific locations in the study area.
2. *Environmental concerns.* Floodplains, landfills, sand pits and oil fields reduce the development potential of sites in the study area. The presence of undesirable land uses also hurts the demand for development in the area.
3. *Insufficient and inadequate infrastructure.* A primary reason why so much land remains undeveloped in the study area is the lack of infrastructure. In addition, some areas that are served have inadequate facilities.
4. *Lack of community services.* Because of the low population density of the study area, many neighborhoods lack the community services and amenities to be found in other, denser, parts of Houston.
5. *Distressed areas.* Many of the older residential areas and commercial corridors are experiencing deterioration. Without some form of intervention to encourage new private development, deterioration will continue and accelerate.

The problems described above are not unique to the study area. The size of the area affected by these problems, and the development potential left unrealized are what makes the Southern Houston Sector study area noteworthy.

Development Potential

It is not only the sheer volume of undeveloped land, but also the size of the tracts, that are a measure of the development potential in the study area. As described before, about 50 square miles of undeveloped land exists in the area. Over 100 undeveloped parcels are over 1,000,000 square feet (23 acres) in area. Additionally, two tracts are over 10,000,000 square feet.

Clearly, the land is available. What remains to be defined is the type of development. To have a better idea of what could be done in such a large part of the city, the Southern Houston Sector Study defined four micro-areas within the larger Study Area

in order to examine in more detail their characteristics and evaluate their development potential. In these smaller areas, some development can be expected without any further government intervention. The Study compares projections of development through the year 2020, assuming an essentially passive approach by local government on the one hand, and assuming active intervention through infrastructure development, environmental remediation and economic development programs on the other.

Table 1: Potential Population, Employment and Cumulative Tax Revenue for the Combined Micro-Areas in Southern Houston under Two Scenarios

	1999 Base	Scenario 1: Current Trends	Scenario 2: Government Intervention
Population Growth	51,700	57,100	69,700
Employment Growth	31,300	43,300	52,900
Population Share in Metro Area	1.2 %	0.96 %	1.2 %
Employment Share	1.4 %	1.5 %	1.8 %
Cumulative Revenue		\$56 million	\$106 million

The estimated cost of the government intervention in terms of infrastructure improvements called for in the second scenario is \$80,000,000 through 2020. The sources for this would be varied. The City of Houston could expect to recoup at least \$106 million in taxes over 20 years in the four micro-areas combined (see Table 1). This calculation does not take into account the whole Southern Sector, nor does it include other variables such as the rise in income resulting from the increase in people and jobs, and the value of the reduction in urban sprawl.

One criticism of government economic development initiatives is that any new development that occurs reflects a shift from one area of the city to another. In effect, the argument is that the gain realized in the study area would be at the expense of some other area, and the net gain for the city is zero. In this particular case, however, the nearby areas of the City of Houston are largely developed. Few large tracts of land are available in closer-in areas. The increased development that would result would be a relocation of investment from areas beyond the City of Houston's jurisdiction, even beyond the areas that the city could potentially annex. Most of the development would therefore represent a net gain for the City of Houston.

Strategies

A variety of methods will need to be employed by the public, private and non-profit sectors to successfully stimulate the development of the study area. The money

needed to immediately launch an \$80,000,000 infrastructure program is not available; and other interventions will be needed to address infrastructure issues and the issues of housing, economy, social services and environment. A successful strategy will target investment, use already available resources, and employ a variety of creative financing methods.

Critical to successfully stimulating new development in this area is collaboration among the stakeholders. Similar to the Main Street Coalition, the city could foster the creation of a coalition of private property owners, non-profit organizations, residents and relevant governmental agencies. Such a coalition would:

1. Take the lead in developing a unified, long-range vision/plan for the area that sets priorities and outlines a set of strategies and actions to achieve the desired vision. Capitalizing on the area's opportunities and assets, the plan would identify opportunities for strategically leveraging public investment that would attract private investment and development.
2. Market the plan, promoting opportunities to potential developers and marshal the support of the local community.
3. Ensure continued coordination among investors and stakeholders and play a strong role in influencing the pattern of private sector development in the sector by representing the interests and concerns of the major stakeholders.

A vital antecedent to forming such a coalition would be an open dialogue with vested stakeholders such as major land-owners, investors and developers about the needs and future of this area. In addition, a review of proposed investment by local governmental agencies, such as the Harris County Flood Control District's project on Sims Bayou, TXDOT infrastructure and the City of Houston CIP commitments, is essential to avoid duplication of efforts and ensure that investment is targeted to priority areas identified in the plan.

Financing needed infrastructure improvements to attract new development will require investigating other financing tools such as Special Districts, Enterprise Zones and Tax Increment Reinvestment Zones and developing a set of incentives. Special districts have recently been introduced in the study area to pay for part of the infrastructure costs of new development.

Finally, an Infrastructure Master Plan that addresses roads and utility needs and anticipates future development/redevelopment, with a timeline for committing to undertake infrastructure improvements, will provide a positive direction to encourage investment in the area. Currently development in the area is difficult due to the lack of infrastructure and the inability of investors to bear the cost of infrastructure improvements needed to make development feasible. Such a plan will ensure timely investment and make the area more attractive to development.

PART I: STUDY AREA OVERVIEW

Sector Studies examine existing conditions, issues and development opportunities in areas of the city with large quantities of undeveloped land. The purpose of focusing on these areas is to create a framework for discussion of:

- 1) the development potential of particular areas within the city;
- 2) citywide and regional priorities relative to needs and opportunities in the area, mainly as they relate to infrastructure, mobility and environmental problems as well as redevelopment; and
- 3) coordination of regional and city functional plans relative to capital programming in order to leverage public and private investments and affect future development.

Identifying issues and potential for development in selected areas of Houston helps public policies take shape. They may serve as an instrument for coordinating local CIP decisions and leveraging investments made by the city, other agencies and private and nonprofit organizations. By helping to define areas of intervention, sector planning can be an effective tool for:

- increasing the tax base by attracting population to underdeveloped areas of the city that otherwise would settle in jurisdictions outside the city limits;
- increasing densities in underdeveloped areas, therefore decreasing the cost of providing infrastructure;
- encouraging jobs and training centers; and
- promoting easy access to jobs, thereby reducing automobile miles traveled and cutting pollution levels.

An important part of this planning process will be the establishment of a coalition of stakeholders made up of both the public and private sectors, including residents, property owners and the business community. This coalition would be charged with developing revitalization strategies, identifying priorities, and leading implementation efforts. Targeted infrastructure investments by the City of Houston could act as a catalyst for implementation by attracting development that otherwise might locate elsewhere in the city or county. Supplemented by economic incentives and funding for brownfields remediation, these investments could lead to greater density in southern Houston, reducing the need for residents to travel great distances for jobs, services, and recreation, and expanding the city's tax base.

Approach

In spite of unprecedented growth in Houston's suburbs including Fort Bend and Brazoria Counties, over 30,000 acres within the city's southern boundaries remain largely undeveloped. To determine the development/ redevelopment potential for

this area, the Planning and Development Department conducted a detailed analysis of Houston's southern areas. The analysis consisted of an assessment of existing conditions, development potential and opportunities and the benefit that investment in the study area might realize for the city as a whole.

The Southern Houston Sector Study consists of several parts:

- Part I presents an overview of the major elements of the study;
- Part II provides a detailed snapshot of current conditions in Southern Houston by examining existing conditions, future trends and issues. It proposes a set of recommendations for establishing an attractive climate for development in the study area, and for preserving viable existing, residential and commercial uses; and
- Part III examines the potential for development/redevelopment in four selected 'micro-areas', the increase in city tax revenues that might result from such development, and the cost of implementing infrastructure improvements that could encourage new development.

The population and employment projections, tax revenue projections, and infrastructure costs presented in the third part are general and merely a starting point for further discussion and analysis. Detailed information on Southern Houston Sector, the methodology and data on the final cost/revenue analysis are provided in the Appendices.

The Study Area

Study Area Boundaries and Methodology

The study area, nearly one fourth of the city's total area, is bound on the north by Loop 610 South; on the west by US 90A; on the east by the Houston city limits; and on the south by the city limits and Sam Houston Parkway (see Map on page 10). This area includes Ellington and Hobby Airports, parts of Clear Lake, a distinctive area between Mykawa Road and SH 288 with a concentration of distressed neighborhoods, a heavily industrial area just south of Reliant Park, and Fort Bend County on the south.

The Southern Houston Sector existing conditions and trends analysis were conducted over several months by collecting and examining land use, demographic, economic, infrastructure, environmental, and community data. Data were mapped and analyzed using Geographic Information Systems software. Outside data sources were consulted and members of the Houston Chapter of the American Institute of Architects participated in the analysis.

Key Characteristics

The southern Houston sector covers approximately 117 square miles (23.2% of the entire City of Houston) of which nearly 50 square miles are undeveloped. In 2000, this Sector had a population of 318,300 (17.6 percent of the total City population). While the City population grew at a rate of two percent per year since 1990, southern Houston's population grew by 1.3 percent per year over the same period. The gross density for the entire sector is approximately 2,700 people per square mile compared to the city's density of 3,860 people per square mile. The highest population concentrations are in the north and northeast portions of this sector.

Large tracts of vacant, undeveloped and underdeveloped land with concentrations of industrial, commercial and residential (primarily single-family) uses characterize the sector. The eastern and central sections contain most of the residential development with densities diminishing toward the south, which exhibits a rural character. Housing varies widely throughout the study area, from new, large brick homes in the Clear Lake and Southwest sections to older, smaller homes with wood siding in the central areas. Commercial uses appear along major thoroughfares. Some commercial areas are blighted and many neighborhoods in the central areas are in need of revitalization where poor street and housing conditions, dangerous buildings and litter are evident. Household incomes in the area generally correspond to housing age, size and quality.

Although housing conditions and incomes vary throughout the study area, most sub-areas share common issues such as inadequate major thoroughfare connections and environmental constraints. Freeways surround southern Houston yet internal connections are missing. Active rail lines without overpasses act as barriers between areas. In addition, there are oil and gas fields, sand quarries and landfills that present additional challenges to new development and redevelopment.

Two commercial service airports, Hobby and Ellington Field, attract light industrial uses on the east side of Southern Houston. Both light and heavy industrial development are found along Mykawa and Almeda Roads and in the proximity of the Reliant Park complex and the Texas Medical Center.

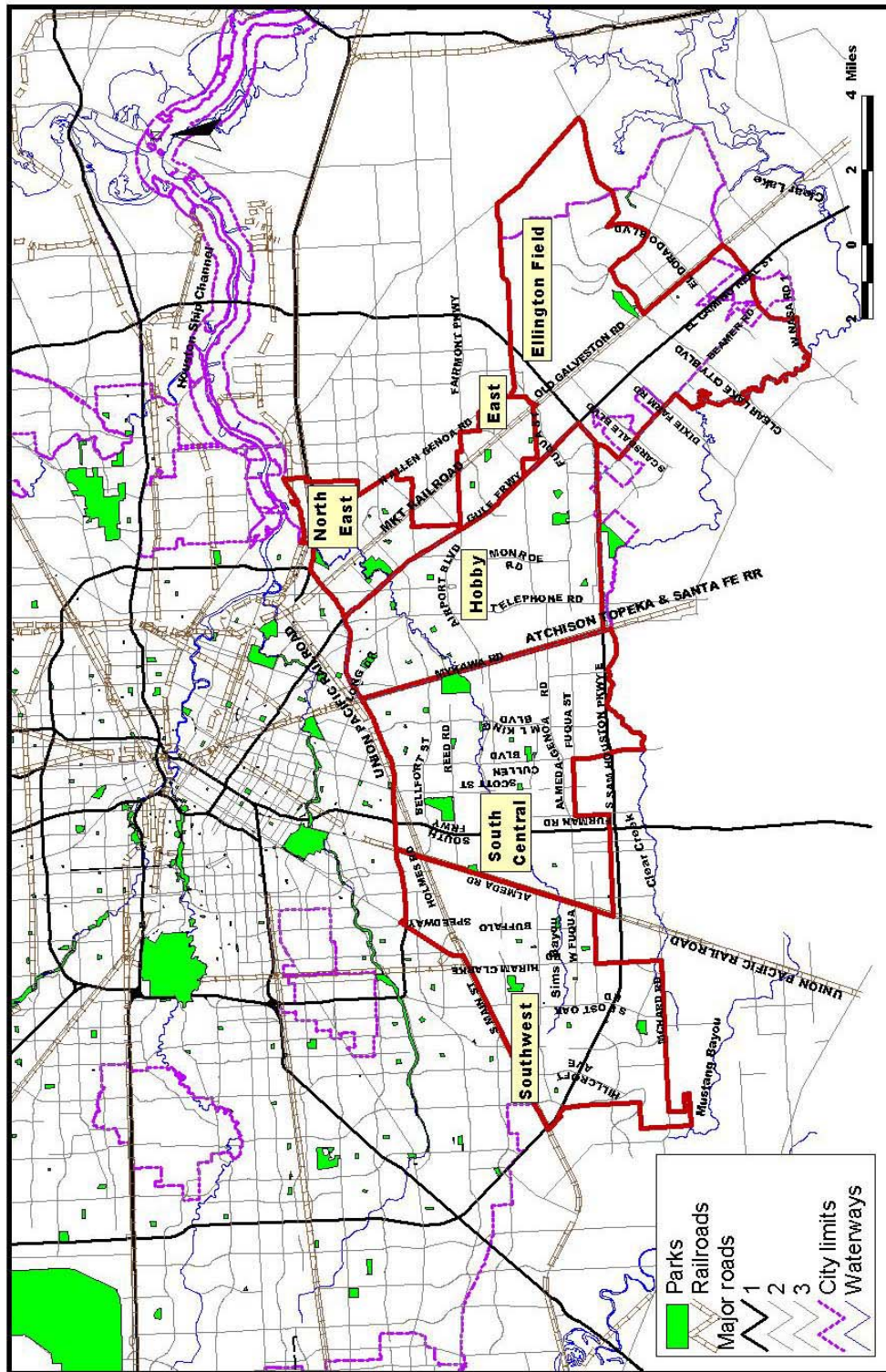
Issues

Five major issues affect the stability and development potential of the sector: 1) accessibility, 2) environmental problems, 3) lack of infrastructure in undeveloped parts of the study area, 4) lack of community services in low-density areas, and 5) continuous deterioration in many older residential areas. Currently, no long-range strategy or plan addresses these issues or the coordination, timing and prioritization of capital improvement investment to enhance future economic stability in the area.

The area has a number of positive attributes that provide a significant opportunity for economic development; however, without a long-range strategy to guide economic

development over the next 10 to 20 years, the opportunity to affect positive change may be

SOUTHERN HOUSTON STUDY: OVERVIEW



City of Houston
Planning and Development Department
July 1999

Map: Southern Houston Study: Overview

lost. A comprehensive, long-range strategy for addressing future growth and development as well as for addressing existing environmental and other problems, which are creating or exacerbating blight and deterioration, is needed. Such a strategy must consider regional and local priorities.

Accessibility and circulation. Major roadway continuity is a problem for most of this sector. To attract development and improve circulation, internal thoroughfares and linkages between discontinued roads are needed. Of the major east-west thoroughfares, only Bellfort Road in the north traverses the area without interruptions. Extensions of Almeda-Genoa and Fuqua Roads, in the south, are included in the city's current Capital Improvement Program to be acquired and/or built. West Airport Road is scheduled to be built with funding from the city and TxDOT. However, most of the missing links to north-south roads are not scheduled to be built any time soon.

Lack of water, sewerage and storm drainage facilities in undeveloped areas. Large tracts of land along SH 288 and south of Fuqua Road lack water, sewerage and storm drainage infrastructure. Because of good accessibility to the Texas Medical Center and prior industrial uses, the area might attract light industrial development if infrastructure were in place; however, infrastructure and other capital improvements are generally based on population growth and are not commonly used as tools for economic development or to guide development patterns. Moreover, for the next eight to ten years, the Department of Public Works and Engineering will focus on complying with subsidence regulations affecting the city's northern areas. As a result, constructing utilities in southern Houston is a low priority.

Environmental Issues. Landfills, hazardous waste dumping grounds and oil and gas fields can be found in the study area. Nevertheless, these properties can be developed depending on the proposed land use and the degree of contamination existing there. Some industrial sites may only be suitable for other industrial uses while those sites with minimal contamination can be converted into commercial, office or even residential uses. For example, around Ellington Field, the market is beginning to drive residential development of land that earlier was used for oil and gas drilling.

Flooding is also a concern in southern Houston in those areas where extensive floodplains associated with Sims Bayou and Clear Creek are located. When building in floodplains, current regulations require building foundations to be raised 18 inches above base flood elevation, but this alone does not ensure protection from floods. For example, since the recent opening of Sam Houston Parkway, development has started to expand along the highway into the Clear Creek floodplain, reducing the amount of pervious surfaces in the area and increasing flooding in the area. By creating greenbelts along bayous and creeks, the negative impacts of flooding along the channel would be reduced. The floodplain area provides an excellent opportunity to be developed as an amenity for open space and passive recreation.

1. **Lack of community services in low-density areas.** Because of sprawl, many residential areas toward the south are isolated from the rest of the City. Some subdivisions are only partially built and many lots are vacant. Community services, retail amenities and transit facilities to serve residents are lacking. Some neighborhoods in the area of Hall Road such as Minitex have inadequate water or sewerage lines.
2. **Deterioration in many old neighborhoods.** In older urbanized areas of southern Houston such as north of Airport Road and east of SH 288, many neighborhoods show significant signs of deterioration: for example, abandoned apartments, houses and commercial facilities; litter; and blighted commercial strips. Some of these neighborhoods, which experienced significant population decline since the 1980's economic downturn, contain dilapidated houses, many vacant lots and numerous tax delinquent properties. Others have stable residential areas but deteriorating commercial corridors. These areas have potential for infill development and redevelopment that, in the long run, could reduce sprawl and its cost to the region. The degree of public and private investment that is needed to rescue these neighborhoods ranges from simple beautification programs to total redevelopment. Some neighborhoods will need a comprehensive approach that includes social services and crime abatement as well as infrastructure improvements and economic development programs.

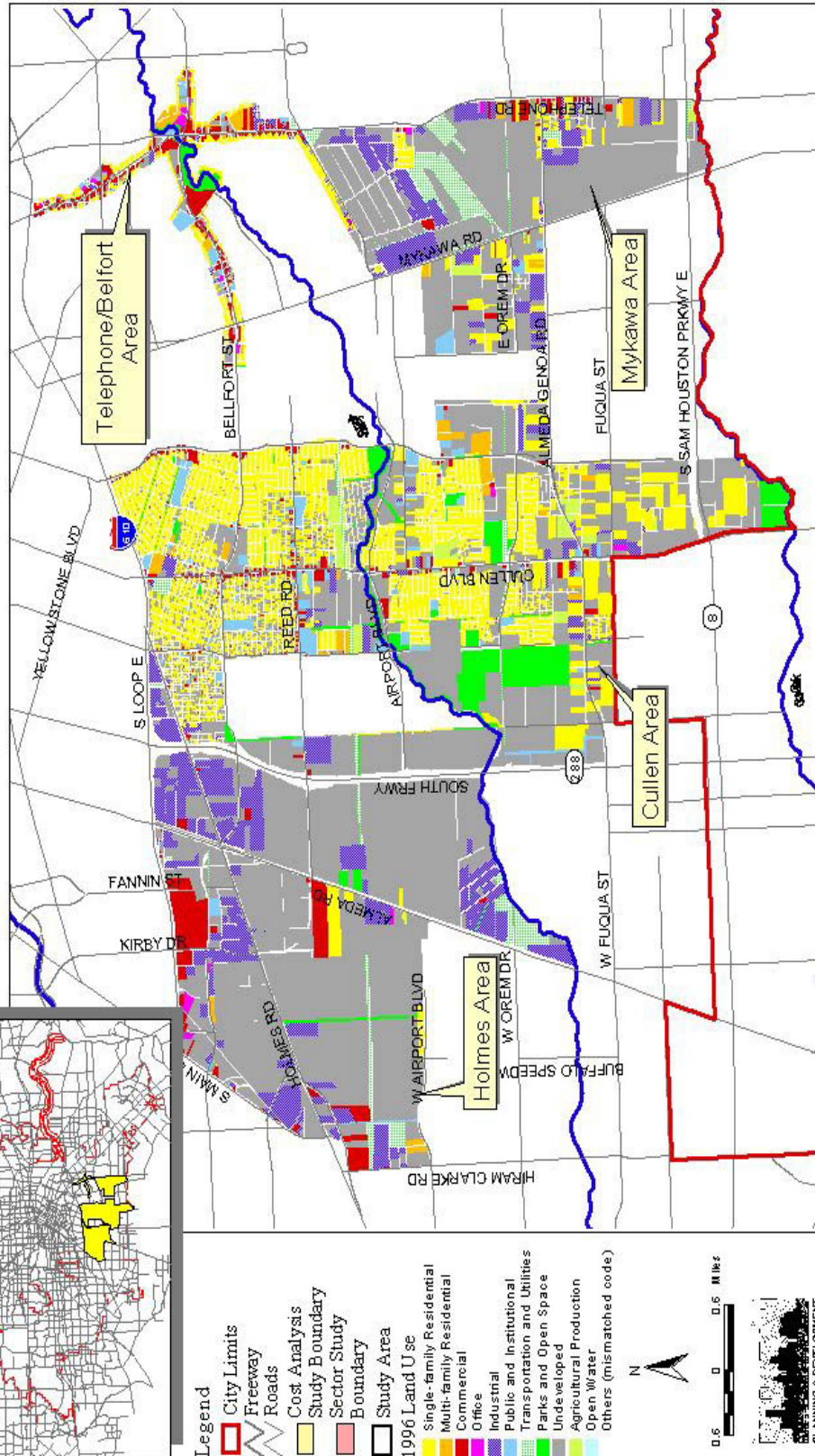
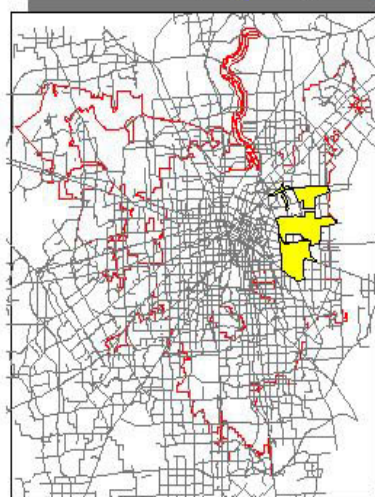
Growth and Development Potential – Cost/Revenue Analysis

To better understand the growth potential in southern Houston, population, employment and cost/revenue projections were developed for four micro study areas over a 21-year time period. This analysis was based on data from 1999 and considered the costs of infrastructure improvements only (exclusive of other intervention such as development incentives, removal of visual blight, increased safety and redevelopment of tax delinquent properties).

Approach and Methodology

Four micro-areas in the southern Houston study area that exhibit considerable development potential (based on the existing condition analysis) were analyzed. Two are predominantly industrial (Holmes and Mykawa); one is mainly commercial (Telephone-Bellfort), and one is predominantly residential with commercial corridors (Cullen). All of these micro- areas have a significant amount of vacant land (see Map on page 13). For each of these areas, two Scenarios were created and used for comparison to project growth and development:

SOUTH HOUSTON SECTOR STUDY: COST/REVENUE ANALYSIS Area Study Boundary



Scenario 1: No additional public or private intervention beyond current or planned levels. This scenario is based on past trends using the Traffic Analysis Zone (TAZ) population and employment projections provided by the Houston-Galveston Area Council.

Scenario 2: Significant investment by both public and private entities and other forms of intervention resulting in higher population and employment growth rates and an increased level of development activity.

The following steps were taken to project population and employment growth, tax revenues and infrastructure costs for each scenario (see Appendix B for greater detail).

1. Quantification of “developable land” in each micro-area, which is defined for this analysis as vacant land. The Telephone-Bellfort area was the only micro-area that included some redevelopable properties as part of developable land.
2. Estimation of maximum build by calculating potential building square footage on available land at prevailing densities, then converting that building square footage to population and employment.
3. Estimation of potential increment of dwelling units and non-residential building square footage in each micro-area over a 21-year time period. For Scenario 1, estimates were based on 2020 TAZ population and employment projections, which were then converted into units and building square footage using current land-use distribution. For Scenario 2, projections were based on population and employment estimates derived from a higher rate of growth. Higher growth rates were determined by comparing micro area growth with county growth, and by considering regional growth share. These figures were then converted into units and building square footage using an assumed land-use distribution scenario as described in the appendix.
4. Calculation of tax revenues for the City of Houston resulting from new development for Scenarios 1 and 2. Tax revenues included property, sales, and hotel tax. This was conducted only for Scenario 2.
5. Calculation of the cost for the city to provide the needed infrastructure to fill the gaps of existing water, wastewater and storm water facilities and road networks in the growth areas.

Using the approach described above, the following projections were made:

- Growth potential of the four micro-areas based on 1) past trends, 2) strong public and private intervention, and 3) the comparison of the two scenarios
- Tax revenue that would accrue from new development in the two scenarios; and
- General infrastructure investment costs for Scenario 2, comprised of cost to implement roads, water, and wastewater lines beyond what are already being implemented or planned

Findings

1. Population growth

Population growth varies dramatically between the largely vacant and industrial Holmes and Mykawa micro-areas, and older and more developed Cullen and Telephone/Bellfort micro-areas (see Appendix C for detailed methodology)

- Scenario 1 doubles the Holmes and Mykawa population by 2020. However, due to a small base population, the actual increment is relatively minor.
- Scenario 2 bases its projection on a vision for the Holmes and Mykawa micro-areas of office parks intermingled with residential uses, bringing the population to triple by 2020.
- Cullen and Telephone/Bellfort micro-areas have been experiencing population decline for over a decade. Scenario 1 reflects this trend by projecting a minimal 5 to 6 percent growth in population over the next 20 years. Scenario 2 assumes that with intervention to revitalize the areas, population growth will be equal to or higher than the county growth rate of 26 percent.

Table 2: Potential Population Growth in 'Micro Areas'

Micro Area	1999 Base	Scenario 1	% Growth (1999-2020)	Scenario 2	% Growth (1999-2020)
Holmes	1,700	3,000	78%	5,000	199%
Mykawa	1,200	2,400	99%	3,600	194%
Cullen	43,900	46,600	6%	54,300	24%
Telephone/Bellfort	4,900	5,200	6%	6,800	39%

2. Employment growth

Holmes and Mykawa

Scenario 2 assumes significant office/warehouse development along SH 288 with accompanying commercial and residential uses.

Telephone/Bellfort

Scenario 2 assumes better use of existing commercial land and that the area can realize a 60% build out over the 21-year planning horizon.

Cullen

Scenario 2 assumes a growth rate similar to Harris County.

Table 3: Potential Employment Growth in Micro Areas

Micro Area	1999 Base	Scenario 1	% Growth (1999-2020)	Scenario 2	% Growth (1999-2020)
Holmes	15,400	23,300	51%	27,800	80%
Mykawa	6,400	8,700	36%	9,600	51%
Cullen	7,400	8,200	11%	9,200	25%
Telephone/Bellfort	2,100	3,200	52%	6,300	200%

Table 4: Potential Residential and Non-residential Growth under Scenarios 1 and 2 (in units and thousands of square feet)

	Holmes		Mykawa		Cullen		Telephone	
	Scen1	Scen2	Scen1	Scen2	Scen1	Scen2	Scen1	Scen2
SF units	1,150	1,600	1,100	1,160	910	2,800	30	140
MF units					230	1,580	85	370
Retail/Service sqft	506	880	172	162	182	335	381	1,524
Office sqft	400	2,800	39	819	6	32	31	125
Industrial sqft	5,500	2,300	1,777	645	93	219	84	335
Hotel sqft					37	39	11	46

3. Fiscal Impact

In general, potential cumulative tax revenues for Scenario 2 are greater than for Scenario 1, the difference ranging anywhere from \$1 million to \$20 million. The degree of difference between the two scenarios results from multiple factors, including projected land-use. For example, retail uses yield sales revenue in addition to ad valorem taxes, resulting in higher fiscal impact. By strengthening the commercial corridors of Telephone and Bellfort, the study estimates that the city can accrue approximately \$20 million more in tax revenue than if present trends continues.

Table 5: Potential City Tax Revenue (in millions of dollars)

	Scenario 1	Scenario 2
Holmes	\$24.1	\$34.8
Mykawa	\$10.7	\$11.1
Cullen	\$10.3	\$29.5
Telephone/Bellfort	\$10.3	\$29.0

Note: Includes cumulative property, sales, and hotel tax revenues resulting from new development for the City of Houston between 1999 and 2020.

4. Costs

The area that requires the most significant infrastructure improvement is the Holmes micro-area, predominantly vacant and lacking basic road networks and utilities. The \$39 million estimated cost to provide these improvements includes, roughly, a \$23 million extension of Buffalo Speedway, Kirby Drive, Reed Road, and Airport Boulevard, which will tremendously improve the area's accessibility.

Table 6: Infrastructure Construction Costs (in millions of dollars)(1)

	Utilities (2)	Roads(3)	Total
Holmes	\$16.7	\$22.9	\$39.6
Mykawa	\$4.0	0	\$4.0
Cullen	\$7.6	0	\$7.6
Telephone/Bellfort	NA	NA	NA
Cullen-Mykawa	0	\$11.5	\$11.5
SH 288 to Mykawa (Preliminary work)			\$16.0
Channelization to Sims Bayou			\$2.0
Expansion of Sims Bayou Treatment Plant			\$5.8

Note:

- 1. Infrastructure costs were calculated based on the extension of water and sewer mains and roads as part of the completion of currently planned major thoroughfare grid.*
- 2. Utilities include water and sewer line extensions.*
- 3. Road costs include extensions beyond what lies within each study boundary in order to achieve connectivity. For example, small segments of Fuqua and Orem exist in Mykawa and Cullen micro-areas; the estimated \$11.5 million accounts for the cost of making the full east-west connection.*

Conclusions and Recommendations

The 32,000 acres of undeveloped land in Southern Houston present a unique opportunity for the city to guide development to benefit the entire urban area. It is an opportunity for new development on vacant land and redevelopment in old neighborhoods to be shaped through a combination of public incentives and provision of services, and private investment particularly at a time when land prices are low. As a result, the city's tax base would be expanded.

State Highway 288, currently underutilized, has the potential to be transformed into a metropolitan growth corridor because it provides access from the fast growing suburbs of Fort Bend County to the Houston Medical Center. While development activity is occurring slowly in the area south of Holmes Road, it will probably accelerate when Airport and Reed Roads are expanded. Improved access can attract higher quality industrial and business parks, which in turn, could spur higher quality associated uses and greater intensity of use. (The City of Pearland envisions this sort of development for the southern end of SH 288). If development increases, so will land value, employment prospects and the tax base. With infrastructure improvements and other programs to attract development, the city's tax base could potentially expand from the projected \$10 million in revenue from this Sector (with no change in present trend, including present level of city investment) to \$29 million (with considerable city intervention).

A shift of economic activity toward service, information and technology could be very advantageous to this Sector. This shift favors uses such as research and high technology facilities, incubator spaces, mini warehouses, showrooms with supporting activities such as recreation, restaurants, hotels, and residential development for which the area is well-suited. An additional benefit of increased new development in the area is increased employment opportunities and their close proximity, together with goods and services, to residents of the Sector. This would reduce travel time and distance to jobs thus reducing air pollution. The older neighborhoods to the east of SH 288 could be redeveloped to promote economic opportunities for lower income residents, and an integration of new and older uses into the existing urban framework.

The city can take a proactive approach to guiding and influencing the growth of this area by helping establish a coalition of stakeholders that could develop a vision, identify revitalization strategies, set priorities and devise implementation strategies. Such a plan would acknowledge that long-term trends such as migration to the suburbs (i.e., Clear Lake City, Fort Bend and Brazoria Counties) and attraction of economic activity to already established centers (i.e., Medical Center, Reliant Park, and NASA) would not be reversed in the near future, but local development patterns, neighborhood revitalization and reinvestment in the sector can be modified by actions such as those listed below.

- *Encourage the development of parks and open space, making use of bayous and floodplains to preserve the floodplain, protect development and separate incompatible land uses.* By creating greenbelts along bayous and creeks, the negative impacts of flooding along the channel would be reduced and residential neighborhoods could be buffered from uses incompatible with nearby neighborhoods. Moreover, the floodplain provides an excellent opportunity to be developed as a community amenity for active or passive recreation.
- *Improve accessibility to and within the area.* By completing north-south and east-west links that are missing such as West Orem, West Airport, Hiram Clarke Roads and Buffalo Speedway, the area could be opened up to new development opportunities. Also, improved public transportation within the study area would benefit the area's lower income residents.
- *Provide water, sanitary sewer and drainage facilities.* The development potential of large tracts of vacant land along the SH 288 corridor could be greatly improved by constructing water, sanitary sewer and drainage facilities. Areas south of Holmes and north of Fuqua Roads could be targeted for industrial uses if the necessary infrastructure were in place.
- *Explore the possibility of using legal instruments available such as Tax Increment Reinvestment Zones (TIRZ), State Enterprise Zones (EZ) and National Enterprise Zones (NEZ) to encourage industrial development along Mykawa Road and west of Telephone Road.* These instruments would provide financing incentives to entice new businesses into the area, protecting residential areas from commercial and industrial encroachment.
- *Enact airport related land use regulations.* Enact airport related land use regulations and agreements with developers around Ellington Field, to enhance the utility of the airport and deter conflicting land uses in its vicinity.
- *Encourage preservation of the floodplain.* Encourage the preservation of the floodplain between Sam Houston Parkway and Hall Road as an open space amenity. Consider developing a conservation area in the floodplain parallel to Red Bluff Road to protect the Armand Bayou watershed and, at the same time, act as a buffer between residential and industrial uses.
- *Improve accessibility to Ellington Field.* Improve accessibility to Ellington Field by connecting Challenger Boulevard to Sam Houston Parkway, creating a new entrance for movement of freight and passengers.
- *Study the possibility of a commuter train to downtown.* Study the possibility of using the railroads parallel to SH 3 and Alameda Road for a commuter train to downtown.

- *Explore alternative uses to oil and gas drilling land.* Explore possible alternative uses such as commercial development to oil and gas drilling for land south of Dixie Road between SH 3 and Beamer Road.
- *Develop targeted strategies for revitalization/stabilization of selected neighborhoods.* Construct physical improvements, target deteriorating housing stock for rehabilitation, attract developers of new housing, encourage economic development and job creation, improve internal circulation and public transportation, improve access to social services, address poor housing conditions and protect residential areas from incompatible uses, especially those in the center section and south of Airport Road.
- *Encourage new community services and commercial development.* Encourage new community services and commercial development for neighborhoods along an extended major north-south thoroughfare such as Buffalo Speedway, and create an economic development plan for blighted commercial corridors such as Cullen Boulevard and Bellfort and Telephone Roads.
- *Study development conditions outside City of Houston limits.* Study conditions of development in Harris, Brazoria and Fort Bend County to explain the dynamics of leap-frogging over southern Harris County, beyond the city limits.

PART II: EXISTING CONDITIONS

This chapter explores the potential for future development through an assessment of existing conditions, needs and trends, and creates a framework for discussion of land use alternatives. This analysis is just the first step in the sector planning process. A coalition of diverse stakeholders including residents, business owners, land owners, public agencies and others must be formed to create a vision for the study area, determine priorities for development and redevelopment, and identify implementation strategies that do not rely solely on public investment to succeed.

Land Use and Development

In comparison with the city as a whole, southern Houston has a very high concentration of vacant and undeveloped land (39.3 percent). At 9 percent, the proportion of industrial land uses is somewhat higher than in the city (8 percent), while the proportion of single-family residential uses is smaller.

Residential Uses

Residential uses take up about 26.5 percent of the land, mostly in the eastern and central parts of the area where higher densities occur. Densities diminish toward the south, but increase again in the vicinity of Fort Bend County, and southwest of Alameda Road. A concentration of residential development also appears in the planned community of Clear Lake, south of Ellington Field.

In southern Houston, single-family residential uses are prevalent in spite of the fact that Lower Broadway near Hobby Airport has one of the largest concentrations of apartments in the city. In fact, single-family residential uses cover 24.5 percent of the land in the study area, comparable to 26 percent for the City of Houston. Multi-family residential uses comprise only 2.1 percent of the land, while in the city they are 4.5 percent.

Residential Trends

Between 1995 and 2000, approximately 5,700 residential permits were issued in the study area, most of which has been single-family residential subdivisions. About 30 percent of these single-family permits were issued south east of Ellington Field, and about 18.5 percent occurred in the south west, in the vicinity of Alameda Road and Sam Houston Parkway along the southern border with Fort Bend County. Construction has begun or has been completed in all areas that were permitted in Clear Lake and Fort Bend County.

Residential platting has occurred south of US-90 where the Greenpark subdivision was divided into 134 lots and further south, the Briargate subdivision has 57 lots available for development. Toward the east, on Fuqua Road near the intersection of Gulf Freeway and Sam Houston Parkway, Fuqua Landing has been subdivided into 70 lots for single-family housing, and toward the north of the intersection, the Southway subdivision has 63 new lots. Recently, the Planning Commission approved a new single-family residential development at the southwest corner of SH 288 and West Orem with 121 lots.

Permit activity in other parts of southern Houston has been much lower. In fact, in the older neighborhoods of Sunnyside, around MLK Blvd, and to the east of Gulf Freeway in Allendale, demolitions outnumbered permits for new construction

These areas, and some areas north of Hobby Airport, exhibit poor street and housing conditions, dangerous buildings, weeded lots and litter. In addition, a large number of properties have tax liens equal to or greater than their appraised value.

Commercial, Office, Public and Institutional Uses

Commercial and office uses occupy approximately 3.6 percent of the land in southern Houston. In comparison, the same uses cover 6.2 percent of the land in the city. Institutional uses cover about 4.4 percent of the land in southern Houston compared to 6.2 percent in the city.

Commercial uses appear along major thoroughfares such as Airport, Telephone, Edgebrook, Alameda-Genoa, Bellfort, Park Place, Fuqua, Scott, South Post Oak, Hiram Clark Roads, Cullen and Martin Luther King Boulevards, Sam Houston Parkway and IH 45. Today, some commercial areas along Bellfort, and Telephone Roads and Cullen and MLK Boulevards appear blighted and others north of Airport Boulevard are experiencing decline and lack of investment. Commercial blight is also present near Alameda Mall due to the aging of the mall and its surrounding environment.

Commercial, Office, Public and Institutional Trends

Between 1995 and 2000 permits totaling approximately 7.8 million square feet of new commercial, office and public/institutional space were issued in southern Houston. About 50 percent of this new permit activity occurred around Ellington Field and Hobby Airports. These areas have benefited from growing commercial development due to the expansion of the airports and associated economic activity, as well as increasing residential development south of Ellington Field.

Additional Retail space permitted was about 2.9 million square feet or 37.5 percent of the total. Measured by building square footage, about 17 percent of total retail development has occurred within a mile of the Sam Houston Parkway and IH 45 intersection. About 30 percent took place in the Clear Lake area along the IH 45 and Galveston Roads corridors. Between 1995 and 2000, nearly 206,780 square feet of hotel construction was permitted in the vicinity of Hobby Airport. Near the area's

southern boundary, retail is following new residential development springing up in a generally rural environment.

Between 1995 and 2000, 1.5 million square feet of public and institutional uses and about 530,000 square feet of office space were permitted. Also, religious institutional building permitting has been very high all around southern Houston.

Platting for commercial uses has occurred along Sam Houston Parkway/SH 3 (Old Galveston Road) and IH 45, and along Fuqua and Genoa-Red Bluff Roads. Another area where some development will occur is along South Post Oak Road, south of West Orem Road, where single-family residential units are being converted to commercial uses. Commercial platting is also taking place south of Reliant Park and at the intersection of Loop 610 and Gulf Parkway.

Industrial Uses

Industrial land uses comprise 9 percent of the land in southern Houston, as compared with 8 percent for the City of Houston.

Two commercial service airports influence industrial land use patterns on the east side of southern Houston: Hobby and Ellington Field. A significant concentration of industrial development exists within a two-mile radius east and west of Hobby Airport, along IH 45. Heavy industrial uses are located on the west side of the airport. Lighter industrial uses are on the east side along IH 45, Monroe Road and Airport Boulevard, Long Drive and Dixie Roads, and Southridge Road. Industrial development connected to NASA also occurs around Ellington Field.

Other areas of industrial development are found along Mykawa and Alameda Roads and in a triangle between Holmes Road, South Main Street and West Loop 610, in the proximity of the Reliant Park complex and the Texas Medical Center. The northeastern corner of the study area is part of the Houston industrial complex located along the Ship Channel. A cluster of small industrial establishments is located at the corner of South Loop 610 and Mykawa Road.

Industrial Trends

Between 1995 and 2000, more than one million square feet of industrial space were permitted in southern Houston; however, about 50 percent of that activity was a consequence of the expansion of only two companies. Most of the activity occurred around Hobby Airport, and in lesser degree, around Ellington Field and in the northern industrial area in the vicinity of the Port of Houston.

Industrial development is increasing to the east and west of Hobby Airport and along Fuqua Road and IH 45 corridors. Recent platting activity has occurred at the Sam Houston Parkway/SH 3 and IH 45 intersections and along Fuqua and Genoa Red Bluff Roads.

Parks and Open Space

Park space for the area covers only 4.2 percent of the land compared with about 9.9 percent for the City of Houston. Taking into account the population, southern Houston has approximately 10 acres of parks and open space per 1000 population, while the city provides about 16 acres.

The ten largest parks cover approximately 1,100 acres of the southern Houston park area. They are Cambridge Village, Blueridge, Sunnyside, Law, Cullinam, Blackhawk, Clear Lake, Glenbrook and Milby Parks, and the Hall Road Reserve. A recently proposed Master Plan for the municipal park system, emphasizing the concept of linear parks along bayous and creeks, opens the opportunity to add more park and open space along Sims Bayou and Clear Creek and to improve and add neighborhood and regional parks. Parks along the bayous would protect the floodplain and act as buffers between sometimes incompatible land uses.

Undeveloped and Vacant Land

Undeveloped land comprises 42.7 percent of the land in southern Houston in comparison with 28.2 percent for the City of Houston. Most of the vacant land is located to the north, east and south of Ellington Airport; south of Hobby Airport; west of SH 288 and north of Airport Road. A small percentage of this land is encumbered with hazardous waste sites, solid waste landfills, and abandoned oil and gas facilities. The Pierce Junction oil field is located in the northern part of the south-central and southwest sectors. None of these conditions preclude development; however, they will likely require costly remediation efforts, depending on the amount of contamination and the proposed land use. Flood prone areas along Sims Bayou further constrain development in the central and Hobby Airport areas.

Legal Restrictions on the Use of land

Aviation Related Restrictions

Currently, there are no local legal restrictions to development of land around Ellington Field that insure compatibility with the airport. The Federal Aviation Administration (FAA) establishes safety standards regarding height, visibility, and hazards such as birds and electronic interference that constitute obstacles for proper aircraft take-off and landing. These standards are mandatory for federal interest airports and are recommended by the Texas Department of Transportation for use in the State. Texas also has an Airport Zoning Act that enables local governments to regulate height and compatible land uses around airports. The City of Houston has an ordinance limiting object height around Intercontinental and Hobby Airports, but not around Ellington Field.

FAA also recommends land uses compatible with different noise levels and the U.S. Department of Housing and Urban Development considers a 65-decibel noise cone

the upper threshold for residential development. None of these legal restrictions are applied to Ellington Field and as a result, residential development has encroached in areas within the 65-decibel noise cone.

Deed Restrictions

According to surveys conducted by the Mayor's Citizens' Assistance Office, in 1997 almost all residential areas south of Ellington Field had deed restrictions. In the vicinity of Hobby Airport, and in the south-central and southwest sub-sectors most neighborhoods did not have deed restrictions. Deed restrictions often cover design, land use and health regulations. However, in Skyscraper Shadows and Valverde Estates, for example, deed restrictions regulate drainage and use of septic tanks only. In some older neighborhoods such as Easthaven, residential deed restrictions have expired or are not enforced. New neighborhoods are more likely to have deed restrictions

Property Ownership and Land Value

Approximately 100,000 parcels make up the area defined as southern Houston. Less than 1 percent of these parcels are one million square feet or larger. Within this group of large properties, 4,256 acres are categorized by the Harris County Appraisal District as general commercial and agricultural vacant land, and 30 acres are categorized as industrial vacant land. It is not known whether or not these are contaminated.

Land ownership is not concentrated, rather it tends to be dispersed among small property owners. The average holding for the study area is almost 25,000 square feet although in high-density areas, lots do not exceed 8,000 square feet. About 110 property owners own one million or more square feet of land. The number of the large parcels is sizeable, providing numerous large-scale development opportunities.

The average assessed value of land in the study area is \$1.40 per square foot. In the first quarter of 2000 the average office monthly rental rate per square foot was approximately \$13.80 in comparison with an average of \$18.04 for the city. The average monthly retail rate for southern Houston in the same period was approximately \$1.20 per square foot in comparison with \$1.48 for Houston, while the average monthly warehouse-distribution rental rate per square feet for southern Houston was about \$ 0.33 and \$0.40 for the City.

Housing and Neighborhoods

Southern Houston had 95,300 housing units in 2000 and an overall vacancy rate of 5.8 percent. Housing types and conditions vary greatly across the sector. New housing can be seen in the Ellington/Clear Lake area, in the far west along US 90A, and along Beltway 8. Older stable subdivisions can be found throughout the study area. Some distressed neighborhoods are located in the northern sections of Hobby and Sunnyside, South Park and Allendale. While many areas can benefit from

beautification efforts, others require substantial infrastructure interventions and some have stable residential areas but distressed commercial corridors. Some neighborhoods may need comprehensive redevelopment programs that address social issues as well as beautification and infrastructure like the Federal Weed and Seed Program. One or two may need to be completely redeveloped.

Housing conditions east of SH 3 are generally very good. Most of the housing is of brick veneer construction with only a little wood siding, mainly in the Brookforest area. Lots are generally large and are very well maintained.

Neighborhoods north of Airport Boulevard are characteristic of an older, aging inner city area. Broadway Road near Hobby Airport is dominated by the presence of large multi-family complexes. These complexes are fairly well maintained unlike some on other major roads, which are dilapidated and abandoned.

South of Airport Road older residential areas have open ditches and substandard streets. In parts of Central- South West, residential areas are suburban in nature and appear to be stable. Some neighborhoods near Mykawa, Dixie and Long Roads have, and are experiencing industrial encroachment. Neighborhoods close to Hobby are affected by airplane noise.

All areas north of Bellfort Road near Loop 610 (Golfcrest-Reveille and Park Place) are generally in poor condition with some moderate areas. Most housing in this area is wood frame and siding. Many homes need foundation and roof repair. A few sites are used as junkyards. Many vacant lots, overgrown weeds, litter and abandoned houses are located in this area.

In southern Houston, neighborhoods within Sunnyside, South Park, and Minnetex, have experienced steady population decline since the 1980's, most likely as a result of the economic downturn during that time. From 1990 to 2000, for example, the population in Sunnyside decreased from about 19,000 to 18,600 people; in South Park, from 22,800 to 20,300, and in Minnetex from approximately 2,500 to 2,200. Low incomes, unemployment, low homeownership rates and inadequate public transportation have undoubtedly contributed to the sustained distress of these communities. Incomes in these neighborhoods are very low; about 30 percent of the households had a median income under \$15,000 in 1997. Population decline and low incomes have contributed to deteriorating physical conditions such as substandard housing, streets, and infrastructure, numerous vacant lots, abandoned housing, litter and dangerous buildings.

Away from Loop 610 and moving south, housing conditions improve. In the area south of Sims Bayou to Fuqua Road, the housing is in moderate to good condition. All housing within one mile either side of Sam Houston Parkway is in good condition. Most of this housing stock was built in the last ten to twenty years and some is currently under construction. Most of the housing south of Sims Bayou is of brick veneer construction.

In the Fort Bend County portion of the study area, neighborhoods close to Sam Houston Parkway and South Post Oak Road are older subdivisions with a significant concentration of wood siding houses. Houses and lots are of medium size (about 5,000 square feet), and units are generally in good to fair condition. Some concentrations of poorer housing conditions exist along West Fuqua Road.

Semi-urbanized areas further south in Fort Bend County are more rural and undeveloped in character, with scattered housing in fair to poor condition, open ditches and lack of sidewalks and curbs. Brick siding construction, curbs and sidewalks typify new subdivisions in these areas.

Dangerous Buildings

Dilapidated and abandoned apartment buildings and an abandoned commercial strip mall exist along Bellfort Road. East of South Wayside, there are several tax delinquent and dangerous structures. Several dangerous buildings are located along the central commercial corridors of MLK Boulevard, Cullen Boulevard, and Bellfort Road.

In the northern section of the study area, most dangerous buildings are located in single- family areas east of SH 288 where tax delinquent properties are numerous.

Population

From 1980 to 2000, southern Houston grew at a rate of 0.7 percent per year, while the city grew at a rate of 1.1 percent per year. Blacks accounted for 38 percent of the population in 2000, down from 41 percent of the total population in 1990. The Hispanic and Asian populations, on the other hand, increased rapidly in the 1990-2000 period. Hispanics grew from 20 percent in 1990 to 32 percent in 2000 and Asians increased from 3 percent of the population in 1990 to 5 percent in 2000 (see Table 6, page 26).

Socioeconomic Characteristics and Trends

Between 1990 and 1997, the civilian labor force increased from 118,500 to 126,100. In 1998 Civilian unemployment was 6 percent in southern Houston and 5 percent in the city.

Between 1989 and 1997 median household income in constant dollars rose by only 1.4 percent in southern Houston after adjusting for inflation. While median household income increased the most in poorer areas, these areas still remained very poor. The income differentials are substantial. For example, in 1997, the median household income around Ellington Field and Clear Lake was \$61,300, while in the area comprising the superneighborhoods of Sunnyside, South Park, South Acres and Minnetex, it was \$26,000. In comparison, the median household income for the City of

Houston was \$30,300 in 1997. Educational levels reflect the same pattern as income. The most educated population lives in the Clear Lake area and south of Ellington Field, but its proportion grew faster in less affluent sub-sectors such as Hobby.

Table 7-a: Southern Sector Study: Population and Ethnicity
Total Population and Hispanic Population, 1990-2000

Super Neighborhood	Total		Hispanic		Percent	
	2000	1990	2000	1990	2000	1990
Astrodome	13,832	13,039	1,316	1,825	10%	14%
South main	4,849	4,642	482	371	10%	8%
Fondren Gardens	49,436	1,717	12,400	962	25%	56%
Central South West	41,820	36,596	14,984	7,685	36%	21%
Fort Bend/Houston	32,867	26,673	7,564	3,734	23%	14%
Sunnyside	18,629	19,092	711	191	4%	1%
South Park	22,282	22,845	3,609	1,142	16%	5%
Golfcrest/Reveille	26,054	22,702	17,415	9,989	67%	44%
Park place	9,902	7,557	7,325	4,685	74%	62%
Meadowbrook/Allendale	22,929	18,974	17,072	9,297	74%	49%
South Acres/Cresmont Park	18,224	17,919	598	358	3%	2%
Minnetex	2,245	2,541	791	356	35%	14%
Greater Hobby	41,198	34,046	21,096	9,192	51%	27%
Edgebrook	19,770	17,296	10,959	5,189	55%	30%
Ellington/South Belt	35,198	34,358	11,536	6,184	33%	18%
Clear Lake	57,117	46,850	5,840	4,685	10%	10%
TOTAL	416,352	326,847	133,698	65,847	32%	20%

Houston	1,953,631	1,631,766
Southern Houston	318,321	281,847

Percent of Super Neighborhood		
Total	86.2%	86.2%

Source: Planning and Development Department from 2000 Census data

**Table 7-b: Southern Sector Study: Population and Ethnicity
Non-Hispanic White and Black Population, 1990-2000**

Super Neighborhood	Non-Hispanic White		Percent		Non-Hispanic Black		Percent	
	2000	1990	2000	1990	2000	1990	2000	1990
Astrodome	5,739	6,520	41%	50%	2,762	2,999	20%	23%
South main	484	1,485	10%	32%	3,554	2,460	73%	53%
Fondren Gardens	7,201	378	15%	22%	26,128	378	53%	22%
Central South West	2,557	4,026	6%	11%	23,568	24,519	56%	67%
Fort Bend/Houston	1,136	2,401	3%	9%	23,514	20,005	72%	75%
Sunnyside	112	191	1%	1%	17,398	18,328	93%	96%
South Park	316	457	1%	2%	18,132	21,246	81%	93%
Golfcrest/Reveille	2,751	5,448	11%	24%	5,446	6,811	21%	30%
Park place	1,116	1,889	11%	25%	322	302	3%	4%
Meadowbrook/Allendale	4,841	8,728	21%	46%	610	569	3%	3%
South Acres/Cresmont Park	239	358	1%	2%	17,242	17,202	95%	96%
Minnetex	424	686	19%	27%	962	1,448	43%	57%
Greater Hobby	6,880	12,597	17%	37%	10,444	11,235	25%	33%
Edgebrook	5,843	10,032	30%	58%	2,005	1,384	10%	8%
Ellington/South Belt	16,190	22,333	46%	65%	4,279	3,092	12%	9%
Clear Lake	40,398	37,012	71%	79%	2,816	2,343	5%	5%
TOTAL	96,227	114,540	23%	35%	159,182	134,322	38%	41%

Source: Planning and Development Department from 2000 Census data

**Table 7-c: Southern Sector Study: Population and Ethnicity
Non-Hispanic Asian Population and Others, 1990-2000**

Super Neighborhood	Non-Hispanic Asian		Percent		Others		Percent	
	2000	1990	2000	1990	2000	1990	2000	1990
Astrodome	3,500	1,565	25%	12%	515	130	4%	1%
South main	206	325	4%	7%	123	0	3%	0%
Fondren Gardens	2,899	-	6%	0%	809	0	2%	0%
Central South West	403	366	1%	1%	308	0	1%	0%
Fort Bend/Houston	329	533	1%	2%	324	0	1%	0%
Sunnyside	252	382	1%	2%	156	0	1%	0%
South Park	71	-	0%	0%	154	0	1%	0%
Golfcrest/Reveille	222	227	1%	1%	220	227	1%	1%
Park place	1,067	605	11%	8%	72	76	1%	1%
Meadowbrook/Allendale	217	379	1%	2%	189	0	1%	0%
South Acres/Cresmont Park	30	-	0%	0%	115	0	1%	0%
Minnetex	37	51	2%	2%	31	0	1%	0%
Greater Hobby	2,313	1,021	6%	3%	465	0	1%	0%
Edgebrook	674	692	3%	4%	289	0	1%	0%
Ellington/South Belt	2,520	2,405	7%	7%	673	344	2%	1%
Clear Lake	6,593	2,811	12%	6%	1,470	0	3%	0%
TOTAL	21,333	11,362	5%	3%	5,913	777	1%	0%

Source: Planning and Development Department from 2000 Census data

Between 1990 and 2000, family households increased in the sector, from 70 percent in 1990 to 71 percent in 2000, reflecting changes in some super-neighborhoods such as South Main, Hobby and Park Place.

Economic Conditions

In 1995, more than 6,000 businesses were located in southern Houston employing more than 100,000 workers. About 83 percent had fewer than 20 employees, and only 1 percent had 250 or more. The largest businesses tended to be in manufacturing and transportation, while small units were predominant in the retail sector. (see Table 7, page 28)

Service businesses comprised 36 percent of the total and retail businesses made up 27 percent; wholesale and manufacturing businesses together were 15.5 percent in 1995.

Between 1990 and 1995, the percentage of agricultural and mining businesses decreased, while that of personal and business service firms grew (see Table 7). The decline of agricultural businesses was due to increasing urbanization toward the south. Oil producers closed some outlets classified as mining establishments because of declining activity in the industry.

Infrastructure

Transportation: Regional Mobility

Southern Houston is well connected to the regional network of freeways and rail freight lines; it has two major airports and is about three miles away from the Port of Houston on the Ship Channel. Loop 610 South, the sector's north boundary, feeds into major regional arteries (IH 45, U.S. 59, IH 10, and U.S. 290). IH 45 South and SH 288 directly connect this area with the Gulf coast. Sam Houston Parkway ties this part of the city to major north/south thoroughfares and to western Fort Bend County suburbs.

The Grand Parkway, a planned new outer ring around Houston, once built, is expected to alleviate congestion, improve mobility along the adjacent SH 288, SH 35 and I-45 in the study area and also serve as an emergency (hurricane) route.

Three major freight railroad lines, which connect the west and east coast of the country to the Gulf of Mexico, run along Mykawa and Alameda Roads from north to south and along SH 3 from northeast to southeast, providing a regional link for trade and industrial activities. Another freight rail line runs along South Main and Holmes Road connecting directly to the Ship Channel.

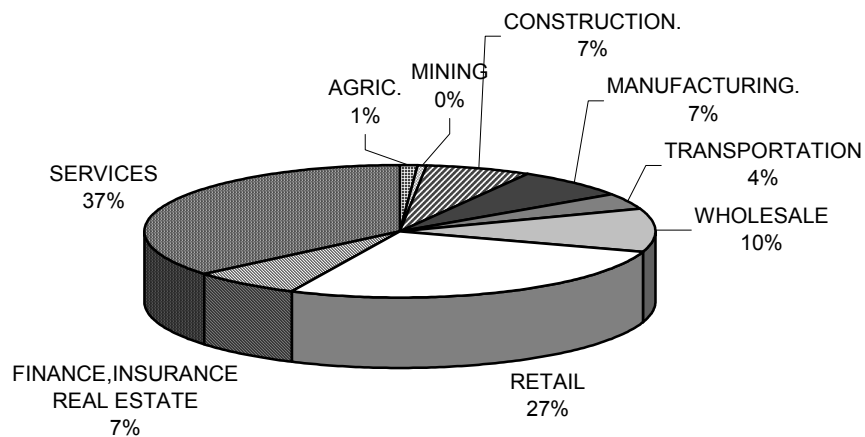
Table 8: Economic Conditions, 1990, 1993, and 1995

	1990		1993		1995	
Total # of Establishments	5,501	Percent	6,045	Percent	6,096	Percent
Agriculture	207	3.8%	141	2.3%	72	1.2%
Mining	29	0.5%	27	0.4%	25	0.4%
Construction	401	7.3%	439	7.3%	412	6.8%
Manufacturing	401	7.3%	422	7.0%	431	7.1%
Transportation	230	4.2%	226	3.7%	253	4.2%
Wholesale	525	9.5%	631	10.4%	635	10.4%
Retail	1549	28.2%	1655	27.4%	1651	27.1%
Fire	267	4.9%	392	6.5%	415	6.8%
Services	1892	34.4%	2112	34.9%	2202	36.1%

Number of establishments by employment size

	1990		1993		1995	
Small	4,587	83.4%	5,004	82.8%	5,043	82.7%
Medium	862	15.7%	980	16.2%	1005	16.5%
Large	52	0.9%	61	1.0%	48	0.8%

SOUTHERN HOUSTON: ECONOMIC STRUCTURE



Hobby Airport, the second largest airport in the Houston Metropolitan Area, is located about nine miles south of Downtown. This is primarily a passenger facility with small cargo operations. Approximately 8.4 million travelers pass through the facility annually. This number may increase slightly in the next five years once concourses have been upgraded and five gates added.

Ellington Field, with an area of 1,942 acres, is located south of Hobby. It is a general aviation airport sharing operations with the Texas National Guard, the U.S. Coast Guard, and NASA. Although planning is underway for further expansion of civil aviation operations, the airport functions mainly as backup for other airports in the metropolitan area and for Coast Guard and NASA training.

Transportation: Local Mobility

Although southern Houston has strong regional links, many sections of the area are not connected. Many north/south and east/west road segments are missing in the local network of thoroughfares, including South Wayside, Scott, Kirby Roads and Buffalo Speedway in a north-south direction and Reed, Airport, West Orem and Fuqua Roads in an east-west direction.

The only continuous north/south service road to industrial and commercial businesses immediately west of Hobby Airport is Telephone Road. Access to the western and central parts of the area is limited because of street discontinuities. Much of the undeveloped land, in the vicinity of Loop 610, Hiram Clark, Almeda and West Orem Roads, is not accessible from any major thoroughfare.

A portion of Challenger Boulevard has been completed and the city is planning to expand this road to the north, providing Ellington Field with direct access to Sam Houston Parkway. Plans to extend Space City Boulevard to Genoa-Red Bluff Road are being prepared by Harris County, while the Texas Department of Transportation (TxDOT) has contracted a major investment study for IH 45 from Sam Houston Parkway south to Galveston.

Mobility is good south of Ellington Field with only moderate congestion primarily along the principal thoroughfares: Bay Area and Clear Lake City Boulevards and SH 3 (Old Galveston Road). Presently, there are three commuter transit routes and two Park and Ride facilities in the Clear Lake area, but no local transit routes. In the sector's central part, local transit provides access to or near Blueridge, Sunnyside, Cloverland Park, Edgewood and Law Parks.

The Texas Department of Transportation (TxDOT) plans to begin construction on SH 35 south of Loop 610 South in 10 to 12 years. TxDOT has not identified the preferred alignment for the section of the road south of Bellfort Road, but it will probably be routed along Mykawa Road. The construction of SH 35 and the connection of major thoroughfares to Mykawa Road and westward should improve access into the study area as well as provide opportunities for commercial and industrial development west of Hobby Airport. Now, at-grade railroad crossings on Mykawa Road limit east-

west access. Little has been done to address this issue due to the cost of such improvements and the need to tie such a project into construction of SH 35.

Some other projects would improve accessibility to the study area. One is Blackhawk Road from Fuqua Road to the city limits, which is in process of acquisition and construction. Others are the construction of lower sections of Monroe Road and Edgebrook Road, which have not been built but are included in the Major Thoroughfare and Freeway Plan.

Traffic is expected to improve on South Main and Post Oak Road as a result of traffic improvement projects that began in Fiscal Year 1999. Traffic congestion would also improve along Bay Area Boulevard between El Camino Real and Space Center Boulevard after the city widens this major thoroughfare as part of the Capital Improvement Program.

Water Supply, Wastewater and Storm Drainage

The City of Houston supplies the study area with groundwater and surface water; however, the Clear Lake Water Authority serves Clear Lake in the Ellington Area. In general, water, sewerage and storm drainage facilities adequately serve neighborhoods and businesses, although some areas have old infrastructure and some areas are not served or are only partially served.

Unserved areas are located primarily in the central section of the study area. Neither the southeast corner of Minnetex nor the areas between Almeda Road and SH 288, and immediately north of Dixie Road between IH 45 and Beamer Road are equipped with water and wastewater trunk lines to accommodate new development. Also, major water, sanitary sewer and storm lines are not present in undeveloped land north of Airport Road. However, the City of Houston is making plans to construct a 24-inch line just north of Orem Road from Almeda Genoa to just east of SH 288. The city is also considering plans to build major water lines between Cullen and Mykawa Roads. Large tracts of land along SH 288 are undeveloped and lack basic infrastructure.

Twelve areas participating in the Neighborhoods to Standard program received infrastructure improvements; however, some neighborhoods including Hall Road, Fairlawn/Southview and East Mini-Tex, Almeda Woods, Parker Gardens, Golden Glade Estates and Holloway Heights have inadequate water or sewerage lines to meet today's standards.

Environmental Conditions

Environmental conditions vary throughout the study area. While most undeveloped parcels are unaffected by floodplains, hazardous waste sites, landfills, and sand pits, some parcels are encumbered by these conditions, and many residential areas are

threatened by flooding. The type and extent of contamination and risk of flooding will impact development opportunities and influence land use decisions. Further study is needed to assess the extent of these problems.

1. Floodplains

Sims Bayou and the 100-year floodplain pass through southern Houston from west to east. A number of residences along Sims Bayou were removed recently as a result of channel improvements. This Sims Bayou flood control project will improve flooding conditions and provide natural amenities.

The Clear Creek floodplain crosses the area along the southern boundary but the impacts of recently completed Sam Houston Parkway are not known at this time. Flooding of Clear Lake during intense rains is a major concern and residents along Clear Creek and the Harris County Flood Control District (HCFCD) are negotiating a solution to the problem.

Flooding is also an issue along Armand Bayou; however, the Harris County Flood Control District in conjunction with the City of Pasadena is acquiring detention sites to control flooding. Acquiring easements or right-of-way for channel improvements is a part of the Armand Bayou Regional Plan. In addition, detention facilities are required for all new development in the Armand Bayou watershed.

2. Contaminated sites

While hazardous waste contamination is known to exist on several sites in or near the study area, other sites are only suspected to have contamination due to the past and present land uses occurring there. The Brio Superfund site has been declared severely contaminated by the Federal Government and is located northwest of Beamer and Dixie Farm Roads to the east of Ellington Field. Wastes from this site contaminate fish from Clear Creek with at least two suspected carcinogens and one chemical that causes nervous disorders. Though this condition does not directly affect neighborhoods and development opportunities within the study area, at the present time, activities on Clear Creek are limited to non-contact recreation due to threat of contamination.

The Texas Natural Resources Conservation Commission has records of six confirmed and four potential hazardous waste sites that are scattered throughout the area and one State Superfund site located at Airport and Hiram Clarke Roads. It should be noted that these sites make up a small proportion of the entire study area and will have a minor impact on the overall development of this sector. Without conducting thorough investigations of each potentially contaminated property, it is impossible to quantify the number of parcels requiring environmental remediation before development/redevelopment can occur.

3. Illegal dumpsites

Many small illegal dumpsites are scattered to the northeast of Hobby and in the central part of the sector between Almeda and Mykawa Roads. These dumpsites

usually contain “heavy trash” such as mattresses, household appliances, construction debris and landscaping debris and are not usually considered hazardous. Illegal dumpsites are usually located on abandoned property, vacant land and dead-end streets.

4. Landfills

Three landfills are located north of Ellington Field: two closed and one active. The closed landfills are properly capped and the active landfill is not used for food or chemical wastes that would attract birds, a major concern for airport operations. Airport operations at Ellington Field would likely limit the uses of these sites. Three additional landfills are located south of West Orem and north of Airport Roads. A closed landfill bound by Holmes and Alameda Roads, is being converted into a golf course, public park and conservation area totaling 450 acres.

5. Oil and gas fields

An inactive oil field, Pierce Junction, is located in the northwestern and central portions of the study area. Abandoned oil and gas facilities exist south of IH-610, between Holmes and Alameda Roads and north of Airport Road. Oil fields do not preclude residential development but would likely require some remediation.

On the western side of Ellington Field, between Beamer Road and SH 3, a large amount of land is currently developed with oil and gas fields. If this land is redeveloped in the future, some mitigation measures may be needed, even if the wells are properly capped. Pipelines cross some of this area and may present impediments for development. If environmental issues can be resolved, industrial or commercial uses may be attracted here because of the proximity to IH 45, the railroad and the airport.

6. Subsidence

The principal cause of land subsidence in southern Houston is the decline of water levels in the aquifers. Approximately one foot of subsidence occurred between 1987 and 1995 in the study area as a result of pumping underground water for public supply. Subsidence occurs throughout the area, and it will continue to pose a problem so long as underground water levels decline further.

7. Noise levels

The city's Aviation Department routes jet aircraft over sparsely populated sections of the study area when possible. As can be expected, noise levels are high near the airports.

Community Organization and Services

The study area is served by a variety of organizations and institutions providing community services.

Twelve super neighborhoods are located in the southern Houston sector. Of these, seven have recognized councils and super neighborhood action plans (SNAP) that focus on capital improvements and maintenance issues. Though neighborhood protection issues and infrastructure are top priorities, several of the councils are attempting to address broader issues of economic revitalization such as corridor redevelopment.

Table 9: Super Neighborhood's in Southern Houston Sector

Number	Name	Recognized Council
40	Central Southwest	Yes
41	Fort Bend Houston	Yes
71	Sunnyside	Yes*
72	South Park	Yes*
73	Golfcrest/Reveille	Yes
75	Meadowbrook/Allendale	
76	South Acres/Crestmont	Yes*
77	Minnetex	Yes
78	Greater Hobby	
79	Edgebrook	
80	Ellington/Southbelt	Yes
81	Clear Lake	

* Combined to form the Sunnyside Super Neighborhood Council

Institutional services include three school districts (Houston Independent, Clear Creek and Pasadena) and two community colleges, Houston Community College and San Jacinto College South serve the area. The University of Houston has a campus in Clear Lake, just outside the study area. Memorial Hospital Southeast, located on Beamer Road, provides medical services. In addition, the area is easily accessible to the Texas Medical Center.

Two Houston Police Department substations are located in the area: on Space Center Boulevard and on Mykawa Road. A police storefront operates on Broadway. Municipal Courts 13 and 14 are housed at the Mykawa Road substation. Crime statistics from 1990 through 1997 show violent offenses are decreasing throughout southern Houston but gang graffiti has increased along with a growth in school age population. The Municipal Prison Farm is located at 8100 Mykawa Road and serves as a detention center for traffic violators. This facility will likely move and the land will be taken over by the Parks Department.

The Houston Library has six branches in the study area: Blue Ridge, Bracewell, Johnson, Mancuso, Meyer and Vinson. The Public Library Master Plan issued on September 2001 recommends replacing facilities and expanding others. The following table lists actions recommended by the Plan.

Facility Recommendations

Name	Year Opened	Recommended Action	Current Sq. Ft	Proposed Sq. Ft.
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Blue Ridge	1999	No change	14,500	0
Bracewell	1970	Replace	8,126	40,000
Clear Lake		Joint Library with County		40,000
Johnson	1996	Renovate	10,500	0
Mancuso	1982	In renovation	11,000	0
Meyer	1962	Determine options	7,650	22,000
Vinson	1969	Replace	9,000	30,000

Source: Houston Public Library Master Plan, September 2001

Active community organizations specializing in development and social services include Clear Lake Development Foundation, Park Place Community Development Corporation, Sims/Hobby Redevelopment Alliance, Neighborhood Centers, Inc., Sunnyside Community Development Corporation, South Houston Concerned Citizens Coalition, and Pyramid Community Development Corporation. Some of these organizations are expanding their areas of concern to encompass developing affordable housing, organizing clean-up efforts, sponsoring activities for the elderly and youth and converting abandoned industrial facilities into usable space.

The efforts of Pyramid Residential Community Corporation, a subsidiary of Pyramid CDC, have resulted in a Tax Increment Reinvestment Zone (TIRZ) to develop Corinthian Pointe, a residential community with supporting services. Named the South Post Oak TIRZ, the TIRZ covers 237 acres near the intersection of West Orem and South Post Oak Roads.

PART III: ANTICIPATED FUTURE DEVELOPMENT AND RECOMMENDATIONS

This chapter lays out a set of recommendations for establishing an attractive climate for future development in the southern Houston sector. At the same time, these recommendations seek to protect and enhance viable existing residential and commercial uses.

After slow economic and demographic growth in the 1980s and early 1990's, population in southern Houston increased and conditions improved, and those areas lagging behind appear to be stabilizing. Income and educational levels are higher and unemployment is slightly lower than in 1990. Residential and non-residential construction activity is expanding, especially in areas close to growth centers such as Clear Lake, Reliant Park Complex, around Hobby airport and toward the suburbs of Fort Bend and northern Brazoria Counties.

Population growth follows a long established pattern of migration toward the suburbs, while economic activity tends to gravitate toward growth centers with good connections. Assuming that these long-term trends continue and with plenty of undeveloped land, future development in southern Houston should expand. In the short run, this expansion may be limited in some portions of the study area by environmental constraints, lack of infrastructure and the general perception of the area as unsafe or lacking in residential services.

Residential development will continue to expand toward the east, near Clear Lake City, and to the southwest and south, where ranch land is being converted to single-family, commercial and service uses. Road improvements including the Sam Houston Parkway are accelerating development in that vicinity. Opportunities could open for additional multi-family residential development along major roads in present suburban communities. The opening of Space Center Boulevard in the north will encourage a certain amount of residential development, restricted by present land uses along Genoa-Red Bluff Road and the airport.

South of Ellington Field, increasing population with a high average income level is attracting retail development. Sites are available adjacent to Baybrook Mall and along El Dorado Boulevard. Commercial uses may expand along IH 45, strengthening the area around Baybrook Mall, and farther north along El Dorado Boulevard, shaping a regional/commercial center. Residential and large-scale retail construction has been occurring here and is likely to continue.

Residential growth is beginning to take place in the sector where several subdivisions have been platted south of US90 to the east of Hillcroft Road, in Fort Bend County within city limits, along Sam Houston Parkway and in the vicinity of the

intersection of Gulf Freeway and Sam Houston Parkway. New platting activity is also happening in the north along SH 288. This may spur economic development along the highways and adjacent major thoroughfares. Continuous growth in Fort Bend and northern Brazoria Counties may spill north into the city limits with residential uses continuing to develop slowly in the southern sections.

Industrial and commercial development is most likely to occur north of Ellington Field as a result of major road expansions and present land uses around the airport. Possible land uses are light industries, office parks, services and business parks. Expanding existing and new manufacturing uses toward the east and north may conflict with new residential development, especially after Space Center Boulevard is extended to the north. These potential land use conflicts may need to be addressed. A good tool to begin to solve these conflicts could be a new master plan for the Airport that the Department of Aviation is developing. The master plan would determine which land uses would be the most desirable uses for city land around the facility.

ExxonMobile Corporation owns and operates most of the oil fields and pipelines in the Ellington area. As the largest landowner of “underdeveloped” property, Exxon will weigh heavily in future land-use decisions there. Recently, Exxon sold land abutting the east side of Ellington Field to the City of Houston for use as a buffer from new residential development. Now Exxon and the Aviation Department are looking into the possibility of ensuring compatible land uses along the future extension of Space Center Boulevard, by including land use constraints into property deed restrictions.

On the western side of the Airport, between Beamer and Old Galveston Road, a large amount of land is currently used for oil and gas mining. If this land is redeveloped in the future, some mitigation measures may be needed, even if the wells are properly capped. Industrial or commercial uses are likely to locate here because of the proximity to IH 45, the railroad and the airport.

The need for lodging and other aviation and travel related services would increase as a result of planned expansion at Hobby Airport. Good regional connections will continue to attract industrial development toward the vicinity of Hobby and will likely fill in the western corner along Mykawa Road.

The area between SH 288 and Almeda Road, north of Orem Road, is a good location for industry due to railroad access and large quantities of land. The Greater Houston Partnership has encouraged high tech support for the Medical Center to locate here.

The area between IH 610 and Allum Road is not suitable for residential or associated commercial development due to hazardous waste sites, solid waste landfills and abandoned oil and gas facilities. Manufacturing and related commercial uses are better suited for this area because of good regional accessibility by IH 610 and two rail freight lines (see Study Area Boundary map, page 11.) Commercial and

manufacturing activity in the area adjacent to IH 610 north of Holmes Road is linked to the Reliant Park complex and the Texas Medical Center, and will probably benefit from their proximity. This area has been growing and will continue to attract services and retail; thereby accounting for most of the sector's future jobs. Manufacturing activity expanded during the 1990's south of Loop 610 and will probably continue its expansion south of Holmes Road if the needed infrastructure is provided.

The alignment for SH 35 along the eastern edge of the study area has yet to be determined. This could stall development along Mykawa Road. If the proposed SH 35 is aligned along Mykawa Road, industrial uses are likely to locate in this corridor.

Lack of infrastructure is an important deterrent for industrial, commercial and residential development. Access to undeveloped land, especially in the area bound by Loop 610, Hiram Clarke, West Orem and Alameda Roads is particularly limited by inadequate transportation infrastructure. The road network is not complete nor are sanitary sewer, water and drainage facilities in place here. Environmental constraints may make some infrastructure connections technically difficult.

The State is considering extending the Enterprise Zone into the northern section, south of Loop 610. This action would encourage revitalization of blighted industrial areas and may be used to entice industrial development to locate here with compatible uses.

In the northeast and center section of the study area, many neighborhoods are in need of revitalization. Poor street conditions, poor housing conditions, dangerous buildings, weeded lots and litter can be seen throughout the area. A large number of properties have tax liens equal to or greater than their values. Many of these properties are grouped together in developed areas and may be good candidates for land banking and large-scale redevelopment projects.

Though many neighborhoods are well maintained and stable, commercial areas along Bellfort, Telephone and Mykawa Roads appear blighted. The commercial corridors are in danger of undermining the stability of the adjacent neighborhoods. For example, prostitution and other illicit activities are perceived to occur along Telephone Road tainting the reputation of the commercial corridor.

Some areas north of Airport Boulevard are experiencing decline and lack of investment. The redevelopment of Gulfgate Mall, just outside the study area, will contribute to revitalization in the northern section by increasing job availability and retail services in the area.

In the southwest, some deteriorating neighborhoods around Hiram Clarke and South Post Oak Roads have been stabilizing and reaping the benefits of higher incomes and better access to commercial centers. One corridor, South Post Oak Road, has been improved recently and old dwellings are being converted into commercial uses.

Floodplains are environmental constraints to development. Sims Bayou floodplain crosses the study area from west to east. Armand Bayou floodplain affects an area outside the city limits, to the east of Ellington Field and Clear Creek floodplain is present in the southern border. Damages caused by flooding are significant along the bayous, especially in densely populated areas. All the bayous have plans for flood control mitigation. The channelization of Sims Bayou in the Hobby sub-sector will prevent severe flooding along the bayou.

Recommendations

To guide anticipated future development, the following two strategies to foster a positive climate for economic development and revitalization are needed.

1. Set citywide and regional priorities for infrastructure, mobility and environmental problems (i.e. brownfields, flooding, etc.)
2. Create a coalition of stakeholders from the study area to develop a broad plan for the area based on extensive public involvement and community consensus that considers its significant physical elements, relates to citywide and regional development trends, and takes into account social and economic factors. (A dialogue should be undertaken with major property owners, relevant governmental agencies and others to further define the issues and determine what type of organizational structure would be most beneficial for such a coalition.) The plan should include priorities and implementation strategies.

Setting citywide and regional priorities would be an essential strategy for achieving growth in the area. The CIP could be an important tool for establishing such priorities and for implementing planning actions that will change the development climate in this area. Integrating an area-wide plan based on community consensus with capital improvement programming could greatly benefit the process of setting priorities, coordinating capital investments and leveraging existing investments for greater impact. In addition, several regional and citywide plans, including the Major Thoroughfare and Freeway Plan, the Harris County Flood Control District watershed plans, Harris-Galveston Coastal Subsidence District Plan, Metro's South Corridor Study and long and short term State transportation plans could be used to determine priorities and coordinate plans and actions.

The broad area-wide plan would be a framework for decision-making that would include a set of recommendations for its implementation. These recommendations would address issues of development/redevelopment, accessibility and infrastructure, environmental constraints, neighborhood conservation and improvement and commercial corridor development. Achieving public consensus on goals and objectives for development will be an essential component of the planning process.

This decision-making framework would guide the implementation of the following recommendations that would help to achieve a spatial pattern such as the one shown on the next page.

New Development/Redevelopment

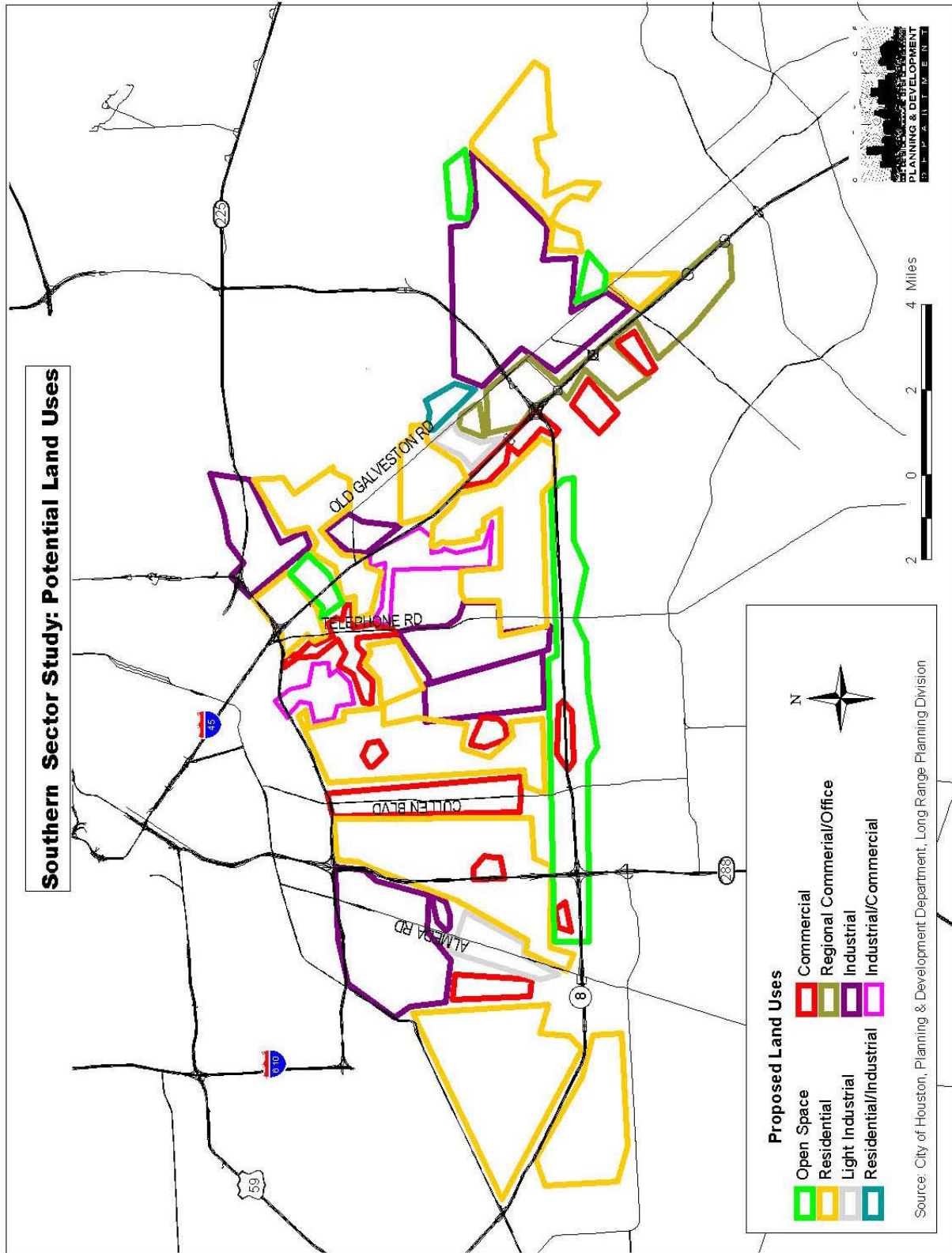
Many opportunities exist for new development or redevelopment for the area that can be fostered by the following actions.

Land Use

- Create transition areas between residential and industrial land uses by encouraging areas of appropriate mixed uses such as commercial/office and industrial/commercial.
- Develop airport related land use regulations around Ellington Field, including enabling legislation, to enhance the usefulness of the airport and deter conflicting land uses. Some restrictions will be needed in the long range to prevent incompatible uses from locating too close to the airport as land becomes increasingly urbanized.
- Explore possible future uses for land south of Dixie Road. This land, owned mainly by ExxonMobile Corporation, is now being used for oil and gas extraction. Incentives may be needed to defray costs of cleaning contaminated soils and to encourage future development.

Industrial Development

- Stimulate industrial development by constructing water, sanitary sewer facilities and drainage in areas that are not currently served. Some areas could be targeted for light industrial uses taking advantage of nearby clusters of economic activity such as the Texas Medical Center and the Reliant Park complex.
- Explore the possibility of using legal instruments available such as TIRZ, EZ and NEZ to encourage industrial development west of Telephone Road and protect adjacent residential areas from commercial and industrial encroachment.
- Encourage industrial development in Ellington Field and surrounding areas, including the northern airport boundary and Genoa-Red Bluff Road, and the oil fields west of State Highway 3 (SH 3 or Old Galveston Road) and protect residential areas from incompatible uses. The Planning and Development Department should continue to work closely with the Aviation Department to implement plans to attract industrial uses to the area.
- Create a master plan that addresses physical improvements, infrastructure, and marketing to encourage development of industrial parks west of Telephone Road and north of Alameda-Genoa Road. The marketing plan should include the availability of large tracts of vacant land and accessibility to rail lines, freeways and Hobby Airport. To improve accessibility to Mykawa Road and points West, the plan should extend east-west thoroughfares that currently do not intersect with Mykawa. The plan should



Source: Planning and Development Department from 2000 Census data

consider the area west of Telephone Road and south of Almeda-Genoa Road for industrial uses; however, this land may also be attractive for single-family housing if residential development continues west of the Gulf Meadows subdivision.

Commercial Corridor Development

- Encourage service and commercial development along a major north-south thoroughfare. A balance of design, construction and environmental protection for the Sims Bayou floodplain could create an attractive new commercial area in the Buffalo Speedway corridor, providing the street is extended. Commercial corridors will act as buffers and service centers for residential areas, particularly if commercial areas are easily accessible from Sam Houston Parkway.
- Encourage redevelopment of blighted neighborhoods using the Neighborhoods to Standard (NTS) and the land assembly programs. NTS can improve basic infrastructure and address nuisances while the land assembly program can aid in assembling land for large-scale redevelopment projects. To enhance redevelopment efforts, improvements to Cullen Road, MLK Boulevard and Bellfort Street commercial corridors are needed.
- Encourage commercial and industrial activities along Mykawa (depending on the SH 35 alignment). The east side of Mykawa is largely industrial due to accessibility to the railroad tracks. If SH 35 is routed along Mykawa, the improved roadway access will be attractive to both light industrial and commercial uses.
- Create a plan to attract commercial development to Cullen Road. Cullen Road offers the only continuous major thoroughfare through the South-Central Sector, increasing the market potential for prospective businesses. Some tools to consider include foreclosure of tax delinquent property, extension of the State Enterprise Zone, development of job training programs to improve the skills of residents, and creation of a circulator bus service to improve residents' access to local jobs.
- Encourage development in the south to the city limits in the central portion by taking advantage of development occurring just south of the study area in northern Brazoria County. Also, take advantage of larger incomes in the south and southwest by promoting economic development along Fuqua and Orem Roads. Sims Bayou should be promoted as a natural barrier between residential land use in the south and industrial activity in the north.
- Create an economic development plan for Bellfort and Telephone Road commercial corridors. The purpose of the plan would be to eliminate blight along the corridors, protect adjacent neighborhoods from commercial encroachment and create a visually pleasing and inviting atmosphere. The plan should include strategies such as stronger code enforcement to lessen the impacts of sexually oriented businesses along Bellfort and Telephone Roads.

Accessibility and Infrastructure

Access and infrastructure (transportation, water and sewer) are key to opening the area to development.

- Improve accessibility by completing north-south and east-west links that are missing. Once links and grade separation at the intersection with the railroad lines are built, circulation will improve and the area will become more attractive. This would foster development in general and industrial development in particular.
- Improve development potential along the SH 288 corridor by installing water and sewer lines. Developers have expressed interest in the area but infrastructure costs are prohibitive. Pending the construction of utilities, the Greater Houston Partnership has proposed developing the area as high-tech support for the Medical Center.
- Improve accessibility to Ellington Field. The airport needs an alternative to the two entrances on Old Galveston Road that can potentially be blocked by a train. This will also improve the prospects of attracting more industrial uses to the area.
- Study the feasibility of using the railroads for a commuter train to downtown. This would be an attraction for airport commuter users and for area residents working downtown, and it will alleviate future congestion along Interstate Highway 45.
- Study the feasibility of a commuter rail line along Almeda Road to downtown. Such a line would encourage high-density residential and commercial while improving the viability of a high-tech corridor along SH 288. This line could tie in with Metro's potential Main Street route.
- Increase development potential in the southern-central portion of the study area by improving east-west access into the area. Fuqua, Orem, and Reed Roads do not connect to adjacent sectors, particularly in the east where Hobby Airport is located. Construction of Fuqua and Orem Roads is included in the most recent Capital Improvement Plan (CIP). To alleviate thoroughfare/railroad conflicts, above grade crossings could be constructed at existing intersections along Mykawa Road.

Environmental Constraints

Flooding in certain areas of the sectors is a problem that could be addressed through the following:

- Consider the possibility of developing a conservation area in the floodplain parallel to Red Bluff Road. A conservation area could protect the Armand Bayou

watershed and, at the same time, act as a buffer between residential and industrial uses.

- Preserve land between Sam Houston Parkway and Hall Road for an open space amenity. Because the land is in the 100-year floodplain, residential and other types of uses are more costly. Open space on this parcel could be a regional amenity by expanding an existing preserve nearby. Choices will have to be made because this section of land fronts Sam Houston Parkway and will probably be attractive for commercial development.

Further studies are needed to determine the extent of hazardous waste contamination on parcels categorized as industrial and opportunities to use Federal funding for brownfields identification and remediation should be explored.

Neighborhood Conservation and Improvement

Many stable neighborhoods exist in the area. The following would increase the stability of the area and make it more attractive to development:

- Provide physical improvement, more services, and protection from incompatible uses to neighborhoods, especially those in the center section and south of Airport Road. Create an incentive program for housing rehabilitation and construction to preserve existing viable housing stock and attract developers to build new housing.
- Target deteriorating neighborhoods for rehabilitation. The city could assist neighborhood and other concerned organizations to develop initiatives for housing, economic development beautification and deed restrictions for physical improvement. If public participation is encouraged and neighborhood associations created or strengthened, the planning process required to renew these neighborhoods could be sustainable in the long run.
- Encourage residential development in areas away from the environmental constraints that exist in the extensive tracts of land north of Sims bayou. The Planning and Development Department with other City departments could help neighborhood associations in preparing and implementing neighborhood plans when assistance is requested. In the southern new neighborhoods, developers, neighborhood associations and other interested organizations could guide development cooperatively.

PART IV: COST AND REVENUE ANALYSIS FOR SELECTED MICRO-AREA ECONOMIC DEVELOPMENT

The 32,000 acres of undeveloped land in southern Houston present a unique opportunity to guide development in a way that could benefit the entire urban area. It is an opportunity for new development in vacant land and redevelopment in old neighborhoods to be shaped through a combination of infrastructure improvements, environmental remediation, economic incentives and provision of services. Now land prices are low. SH 288, currently underutilized, could be transformed into a metropolitan growth corridor in due time as a result of connecting the Texas Medical Center with the rapidly growing suburbs of Fort Bend County. Slowly development activity is taking place slowly and will accelerate when Airport and Reed Roads are extended. As development increases, so will land value. Higher quality industrial and business parks will appear on the best sites, densities will increase and higher quality associated uses will also appear. As a result, the city would have an expanded tax base.

Although a number of conditions will increase the cost of development within this sector, if the issues of infrastructure and access are addressed, the potential for new development and for the economic stabilization of the study area is very positive. Four micro-areas with high development/redevelopment potential within this sector were identified with the purpose of estimating the general cost of providing infrastructure for projected future development. For these areas, two population and employment scenarios were developed to illustrate the potential tax revenues that might be realized if 1) current growth patterns continued over the next 20 years, and 2) if growth rates are more aggressive over the next 20 years. Note that this analysis is intended for illustrative purposes only and does not suggest that infrastructure investments estimated here will alone result in accelerated population and employment growth.

The method for projecting population and employment was tailored for each micro area. Traffic Analysis Zone projections from Houston-Galveston Area Council were used for Scenario 1 projections, unless otherwise noted. Total build out scenarios, regional growth rates, regional population and employment shares, building permit activity and other factors were used to generate projections for Scenario 2.

Study Areas

Four micro areas in the sector were selected for analysis, based on their positive development potential, which takes into account existing conditions and constraints and significant amount of vacant, developable land (see map on page 13). These

micro-areas reflect different types of development potential: two have strong potential for expanding industrial uses (Holmes and Mykawa), one is residential-commercial (Cullen Blvd) and another is a commercial corridor (Telephone-Bellfort). For example, along SH 288 large quantities of vacant land exist which could be expanded as high tech office and industrial uses. The proximity of these parcels to SH 288 and connections to rail, freeways and airports creates a prime development opportunity for the area. Growth is already starting to take place in the vicinity of SH 288 because of the expected opening of West Airport Road in the near future. Further toward the east, the renovation and improved access to Hobby Airport has created a catalyst for new commercial development along Airport Boulevard.

1. Population and employment estimates

General assumptions

Population trends in Houston will continue along established patterns of migration to the suburbs. Employment will continue to be attracted to growth centers. In particular, the micro areas targeted in this study will be under the increasing influence of expanding Fort Bend residential suburbs in the south, and the active employment hub at the Texas Medical Center. Other developments such as the expansion of Hobby Airport and the Port of Houston would reinforce these pressures. The building of the road network throughout Southern Houston would strengthen the links to the industrial and commercial points to the east.

The population and employment model presented for the four micro-areas is based on the belief that current trends could be strengthened or modified to consolidate employment and residential centers. For example, links could be strengthened to the Texas Medical Center. The model assumes that the current industrial base located there could be transformed by the on-going industrial trend toward technology-oriented development. This new transformation could take the form of office/industrial parks with interspersed residential areas. However, the micro-areas would continue to house industrial units linked to the oil and petrochemical industry because they will remain a significant factor in the Houston economy in the foreseeable future.

Population decline, an effect of migration to the suburbs, could be slowed down or reversed in residential areas by policy interventions to address unemployment, homeownership, transportation needs and poor housing conditions. New residential development could occur in current vacant land or in abandoned industrial or commercial sites with minimal environmental contamination.

The first scenario, which assumes a continuation of current trends in population and employment with minimal city investment, is based on TAZ population and employment figures which are allocations of total employment for the Houston Metropolitan Area, a result of econometric and land use modeling. In this scenario, the population share of the combined four micro-areas in the Houston-Galveston Metro Area will decline from 1.17 percent in 1999 to .96 percent in the year 2020. The

employment share will increase slightly from the 1999 1.37 percent figure to 1.44 percent in 2020, assuming that the industrial and commercial sectors of the economy remain strong.

The second scenario is predicated on strong intervention that addresses the issues presented in the existing conditions analysis. This includes but is not limited to infrastructure improvement to targeted areas, especially along SH 288, environmental remediation, revitalizing distressed neighborhoods and encouraging better use of commercial land. First, full build-out scenarios were prepared based on prevailing densities, average family size, standard floor area ratios and standard employee per square foot measures (see Appendix C). Then, regional growth rates, regional population and employment shares and building permit data were examined to determine what proportion of the build out scenario would occur over the planning horizon. In Scenario 2, population share of the four micro-areas as part of the metropolitan area would stabilize, remaining at 1.17 percent, the same level in 1999 and 2020¹. In absolute numbers, population would increase from 51,700 in 1999 to nearly 70,000 in 2020. As for employment in the micro areas, its share in the metropolitan area would jump from 4.1 percent in 1999 to 6 percent in 2020.

Note that the micro areas were chosen for illustrative purposes only. Scenario 2 assumes that some population and employment would be drawn to the area if improvements were made; however, conditions in these micro areas have not been compared with similar areas in the southern Houston sector or the entire region.

Holmes Micro-Area

Area character and trends

This area covers 6,045 acres of land and had a population of 1,674 in 1999. About 86 percent of the land is vacant (a small portion of which is landfills, easements, floodplains and utilities); more than 9 percent is industrial and 4 percent is commercial. The area is accessible by the South Loop, South Main and SH 288, as well as by two railroad lines along Almeda and Holmes Road. Roughly, more than 70 percent of the area could be available for development.

Since 1992, commercial and warehouse development has increased in the northern triangle between the Loop 610, South Main and Holmes Road, mainly because of highway connections and proximity to Reliant Park. Some Multifamily residential developments have been platted in the north along SH 288 and the Loop 610, and south of Bellfort Road. However, any short-term increase in development will probably result from two projects underway: the conversion of a landfill into a golf course and recreational open space (450 acres) and a new community college campus between SH 288 and Airport Road (100 acres).

¹ Shares calculated from H-GAC data. See appendix

Projected Growth Scenarios

Scenario 1 assumes that present population and employment trends will continue. Industrial and commercial land would gain space immediately south of the Loop 610, south of Bellfort and along Almeda Road. The new community college will probably anchor development along Airport Boulevard and spearhead development along SH 288. The new golf course could encourage compatible development south of Holmes Road.

TAZ figures were not used to project population growth in this micro-area because TAZ boundaries do not match the boundaries of the study area. Instead, population projections for the year 2020 are based on residential permits and residential platting. Following the current trend, 77 housing units would be added every year but with a vacancy rate of 9.6 percent, the total number of occupied housing units will be small. It is assumed that vacancy rates will mirror those of the City. Also, household size will be equivalent to the city average of 2.6. As a result, the area would increase its population by 78 percent at the end of the 20-year period, which in real numbers, amounts to only 3,000 people.

Projected employment at the end of the 20 year period is based on TAZ even though the boundaries do not match the study area. This was done because, according to land use maps, employment occurring within the TAZ boundaries is indeed located within the study area. The Holmes employment figure was converted into square feet using ULI (Urban Land Institute) conversion factors and prorated by land uses. The result is that industrial land uses will generate most of the employment, followed by retail and office.

Scenario 2 assumes a significant increase in the rate of development, especially along SH 288, changing the character of the area. In this scenario, new projected development will be essentially light industrial/commercial accompanying interspersed residential uses. As a result, office space in the area could grow by about 2.8 million square feet. Employment could grow by 80 percent, mainly because of new office space followed by additional industrial and residential development. This growth is based on the assumption that the area can attract a much greater share of the region's population and employment than in the past. Though still small compared to population and employment shares in other areas of the region, the Holmes micro area could attract a population of 5,000 and generate employment of about 28,000, mainly because of land availability and an excellent transportation/communication network. Note that this scenario is for illustrative purposes only, and the Holmes micro area has not been compared with similar areas in the southern Houston sector or in the Houston region.

Mykawa Micro-Area

Area Character and Trends

The Mykawa area is 45 percent (1,462 acres) undeveloped. Availability of developable land is spread throughout the area, but large portions exist north of

Alameda-Genoa Road. The majority of developed land is mainly industrial or residential at 16 percent and 9 percent, respectively. Institutional and commercial uses comprise small proportions with 1 percent and 2 percent, respectively.

Currently, the area's population is very small (1,225 people occupying 601 housing units). There are, however, nearly 6,400 employees due to a significant number of industrial sites.

Table 10: Holmes Micro-Area Potential Growth Summary (in units or millions of square feet)

Landuse	1999 Base	Scenario 1	Scenario 2
Residential units	700	1,150	1,600
Retail/Service sqft	.490	.506	.880
Office sqft	.275	.400	2.800
Industrial sqft	5.430	5.540	2.330
Population	1,700	3,000	5,000
Employment	15,400	23,300	27,800

Notes: Projected figures shown at the end of period. Numbers are rounded.

- Only major land uses are included
- Base employment and projection for scenario 1 are based on TAZ numbers
- Base population is calculated from existing housing units, vacancy rate for zip codes in the area and average city household size. Scenario 1 population is based on projected housing units, average city vacancy rate and average city household size.
- Projections for scenario 2 are based on available land and development apportionment by different land uses, to which modified ULI factors were applied.

Surrounding land uses show a small mix of single family, undeveloped and industrial uses. Single family development is present in large pockets to the east, west, and north-west of the micro-area. Industrial uses are in smaller pockets to the north, east, and west. Most of the land uses around the northeastern boundary of the micro-area are transportation and utility, reflecting proximity to the airport and airport related uses.

Development trends in the Mykawa micro-area have been relatively slow. Year 2000 permits showed no activity. From 1992 to 1999, building permit activity showed small increases in residential and very little activity for industrial and institutional uses; commercial permits also showed small increases. Most permitting activity occurred in the 77075 zip code, which is in the southern section of the micro-area.

Projected Growth Scenarios

In **Scenario 1**, using existing proportions of land uses and applying the 20-year TAZ population and employment projections, industrial and retail land uses will grow significantly, though still remaining an insignificant share of the regional population. Residential population will double with additional single-family units (see Table 7). Employment is expected to grow by 2,300 jobs.

Scenario 2 projections assume that, like the Holmes micro-area, Mykawa will receive a greater share of the regional population and employment growth than in the past. In this scenario, institutional, light industrial and residential uses will be attracted to the area due to improved accessibility. With Hobby Airport neighboring the micro-area, more airport-related facilities would fill in the northern parts of the micro-area. These facilities would include institutional and some light industrial uses.

Currently industrial uses exist along Almeda-Genoa; with the construction of E. Orem through to Telephone Road, continuation of industrial uses along this corridor could be anticipated. Concentrations of residential uses in the south near Fuqua and Beltway 8 could be encouraged. With the Airport and the noise generated by airport activity, further residential development in the north should be discouraged. The south end could attract residential uses with the construction of Fuqua from Mykawa to Telephone Road. This continuation of Fuqua would allow a spill-over of residential construction from the west.

After residential development occurs, supportive commercial activity normally follows. In the Mykawa micro-area commercial development would be mixed along Telephone Road and possibly between Orem and Almeda-Genoa.

Table 11: Mykawa Micro-Area Potential Growth Summary (in units or millions of square feet)

Landuse	1999 Base	Scenario 1	Scenario 2
Residential units	600	1,100	1,200
Retail/Service sqft	.248	.172	.162
Office sqft	.56	.39	.819
Industrial sqft	2.556	1.777	.645
Institutional sqft	.09	.06	.37
Population	1,200	2,400	3,600
Employment	6,400	8,700	9,600

Notes: numbers rounded

Cullen Micro-Area

Area Characters and Trends

The Cullen micro-area is largely residential, with several commercial corridors including Cullen, Reed and MLK Boulevards. The entire area has been experiencing population decline and change in racial makeup. While the area is still predominantly black, the ratio of Hispanic population has been rising.

There are currently 451 acres of undeveloped land in this micro-area. Between 1990 and 1999, very little development occurred. In spite of easy access to downtown, the Texas Medical Center and other major employment centers, the Cullen micro-area is lagging far behind other areas within the city and surrounding counties in attracting development.

Varying degrees of development potential exist in this micro-area. To the north of the Sims Bayou, a heavy concentration of tax delinquent properties could be redeveloped to viable residential uses provided that there is strong intervention by the public sector to address high unemployment, poor housing conditions, low incomes and inadequate public transportation. South of the Sims Bayou, large tracts of vacant and agricultural land suggest significant potential for new subdivision development. One new subdivision was recently developed just east of this micro area, along Beltway 8. The City of Pearland, directly south of the micro-area is experiencing exponential population growth. This growth might spill over to the micro-area if issues discussed earlier in this report are addressed. In addition, improvements to Sims Bayou being implemented by the Harris County Flood Control District will dramatically minimize the areas that are impacted by flooding.

The area located north of the Sims Bayou contains subdivisions that are not entirely developed; a significant number of properties have been lying vacant for years in these subdivisions although water and sewer services are available. This area also contains some of the highest concentration of tax delinquent properties in the city. The area located south of the Sims Bayou also contains vacant lots, most of which are large and represent significant development potential. Over half of this area, or 2,200 acres, is vacant.

Projected Growth Scenarios

Scenario 1 is based on 2020 TAZ projections and represents a “status quo” scenario. Population and employment increases based on TAZ numbers were converted into residential units and non-residential building square footages, using existing land-use proportions, density and other factors. Between 1999 and 2020, population and employment would increase by 6 and 11 percent, respectively. With the exception of retail, minor growth is expected to occur in all land-use categories. Office, in particular, is only expected to add about 6,000 square feet in 21 years.

Scenario 2 is based on population and employment growth rates similar to the level of the Harris County average.² Scenario 2 anticipates a largely residential community with retail and service corridors, and some degree of industrial development in commercial corridors. A significant increase in institutional use is also anticipated to accommodate the needs of future residents.

Infrastructure investment, in particular, will benefit the areas south of the bayou where wide gaps in water, sewer and road networks exist. Large tracts of vacant land here offer great opportunities for subdivision development catering to the needs

² Due to varying degrees of development potential in the zones based on elements such as availability of vacant land, parcel sizes, existing land-use, different population and employment growth rates were used for the four zones. It was assumed that provided there is sufficient developable land, the Cullen study area could grow more or less at a similar rate as the Harris County average in a favorable development environment. Zones 1 and 3 assumed the same population growth rate as the Harris County, while Zone 2 assumed half the Harris County’s rate and Zone 4 assumed double the rate.

of people who work in Downtown, Texas Medical Center and outlying employment centers. On the north side of the bayou, programs that promote in-fill development and bring tax delinquent properties to productive use will be of particular benefit along with efforts to address unemployment, poor housing conditions and inadequate transportation. Linear parks along the bayou and other amenities are also considered key to making the area attractive to developers, businesses, and current and future residents.

Table 12: Cullen Micro-Area Potential Growth Summary (in units or millions of square feet)

Landuse	1999 Base	Scenario 1	Scenario 2
SF units	11,570	910	2,800
MF units	3,300	230	1,580
Retail/Service sqft	.909	.182	.336
Office sqft	.027	.006	.032
Industrial sqft	.498	.092	.219
Hotel sqft	.123	.037	.039
Institutional sqft	.254	.058	.221
Population	43,900	2,700	10,400
Employment	7,400	800	1,800

Telephone/Bellfort Micro-Area

Area character and trends

This micro-area, comprised of several blocks east and west of Telephone Road between Loop 610 and Airport Blvd, and a few blocks north and south of Bellfort Road between Broadway and Mykawa Roads, is a commercial axis in the center of a largely residential area. The increasingly multi-racial make-up of the area is reflected in the number of shops on Telephone Road that cater to the Hispanic and Asian populations.

Both the Telephone and the Bellfort corridors have a high proportion of retail and service uses. The Telephone corridor has a higher intensity of use; new strip retail centers that include major retailers such as Kroger and Eckerd's have been developing immediately south of Loop 610. The primary land use in the Bellfort micro-area is single-family. Total vacant land in this micro-area is 124.5 acres; however, a large amount of this developable land is located in the floodplain.

Projected Growth Scenarios

The Telephone/Bellfort area required a different approach in scenario development because TAZ boundaries do not match this micro-area.³ First, total "developable land"⁴ was estimated; second, a land-use scenario common for both Scenario 1 and 2 was developed; and third, assumptions were made on the amount of land that would be developed over 20 years in the two scenarios.

³ TAZ projections could not be used, as the size of the study area was significantly smaller than the TAZ area.

⁴ For this study area, developable includes redevelopable land. It was assumed that 25% of the currently underutilized land has the potential to be redeveloped.

For **Scenario 1**, it was assumed that 15 percent of the developable land, or 39.8 acres, would develop over the 21 years. A major increase is anticipated in retail/services, and a much smaller increase in industrial, office and institutional uses.

For **Scenario 2**, it was assumed that 60 percent of the developable land, or 159 acres, will fill-in or rebuild over the 21 years. A linear park is feasible on the undeveloped land closest to the bayou and the Bellfort/Telephone intersection. This scenario expects a major population increase as a result of significant residential development and a tripling of employment. The scenario also assumes that a corridor revitalization effort could bring back the Telephone/Bellfort corridors as a main street for the surrounding neighborhoods, providing ample neighborhood retail and services.

Table 13: Telephone/Bellfort Micro-Area Potential Growth Summary (in units or millions of square feet)

Landuse	1999 Base	Scenario 1	Scenario 2
SF units	620	30	140
MF units	1,260	85	370
Retail/Service sqft	.224	.381	1.5234
Office sqft	.160	.031	.125
Industrial sqft	.374	.084	.335
Hotel sqft	.220	.011	.046
Institutional sqft	.414	.062	.247
Population	4,900	280	1,900
Employment	2,100	1,100	4,200

Revenue estimates

General assumptions

Tax revenues for the City generated by new growth were estimated for both scenarios in the four micro-areas.⁵ Ad valorem taxes, sales taxes and hotel taxes were all estimated. It is assumed that:

- there is no major economic change in the real estate market throughout the projected period;
- annual growth rate is constant;
- there is no increase in ad valorem property, sales and hotel occupancy tax rates;
- all single-family units are homestead properties eligible to receive homestead exemptions;
- all institutional structures are tax exempt; and
- all commercial square footage generates sales tax.

⁵ Revenues for other taxing jurisdictions including Harris County and HISD are not considered.

Holmes Micro-Area

Holmes Road micro-area lies in the southerly corridor of potential high-tech office/industrial development between the Texas Medical Center and the City of Pearland beyond Beltway 8. Therefore, the projected office/light industrial development/redevelopment in the area will be mostly high-tech, incubator facilities needing significant governmental subsidies in the short term. This explains the rather moderate gain in total tax revenue from Scenario 1 to Scenario 2 (see Table 10) – a net gain of about \$10 million over 21 years.

The newly proposed 55-acre movie production/entertainment complex at the corner of Fannin Street and Holmes Road, south of Reliant Park will further change the area's tax-revenue equation. It would also enhance the image with better quality and environment-friendly development.

Mykawa Micro-Area

A lesser volume of the type of high-tech industrial/office warehouse development projected for Holmes Road corridor will occur in the Mykawa micro-area. This will also result in an increase in tax revenue of less than \$1 million from Scenario 1 to Scenario 2 over 21 years.

The railroad line along Mykawa has and will continue to have significant effect on development in the area, including impacts on general access and vehicular circulation. However, the rail line also has potential use in any future mass transit plan involving the sector.

The final alignment of SH 35, if parallel to Mykawa, will likely have a significant effect on future development in the area. Currently, SH 35 ends at the University of Houston.

Cullen Micro-Area

With and public and private investments, development in the Cullen area would occur. Infill and new developments would triple tax revenues in the 21 year period. Perhaps a significant amount of gentrification will occur if middle and upper income African Americans return to their historical community.

Telephone-Bellfort Micro-Area

The Telephone-Bellfort micro-area centers on the intersection of Telephone and Bellfort Roads. Except for a few possible infill developments, a large amount of the gain in taxable construction space will occur as redevelopment or improvement upon existing structures. Some part of this redevelopment will be in public tax-exempt facilities. New, higher quality development will also occur in currently undeveloped parcels.

Adverse social perception, physical blight and negative economic conditions should be reversed before the projected growth and development can take place. The

needed investment to bring blighted areas to standards is indeterminate at the present time. Therefore, the net effect of such preliminary investment has not been included in this revenue calculation.

The eventual alignment of SH 35 will have significant impact on the nature of new development along Telephone Road. A pilot program by the City of Houston could be an urban-design enhancement of Telephone Road to parallel the treatment of the same road in Pearland where it is regarded as that city's "Main Street".

Table 14: Potential Tax Revenues (In million of dollars) for the Micro-Areas

Taxes	Scenario 1	Scenario 2
Holmes Road		
Property tax	\$14.3	\$18.6
Sales tax	\$9.9	\$16.2
Hotel tax	0	0
Total	\$24.1	\$34.8
Mykawa		
Property tax	\$7.2	\$7.8
Sales tax	\$3.5	\$3.3
Hotel tax	\$0	\$0
Total	\$10.7	\$11.1
Cullen		
Property tax	\$5.7	\$21.8
Sales tax	\$3.9	\$7.0
Hotel tax	\$0.7	\$0.8
Total	\$10.3	\$29.6
Telephone-Bellfort		
Property tax	\$1.9	\$6.0
Sales tax	\$8.2	\$22.3
Hotel tax	\$0.2	\$0.7
Total	\$10.3	\$29.0

Infrastructure cost estimates

The cost of constructing water and sewer lines in undeveloped areas and of completing major thoroughfares was explored to give a rough estimate of the magnitude of CIP investment needed to address infrastructure issues discussed earlier in this report. Following is a description of the general improvements considered along with linear footage and cost per linear foot.

General Assumptions

The cost of providing water, wastewater and roads was calculated by estimating the investment needed to expand roads and utility networks. Also added was the cost of expanding wastewater treatment plants. Additional investment estimates were added to cover preliminary work and drainage between SH 288 and Mykawa and improvements to Sims Bayou. Of the three components of cost (capital, maintenance and interest), we assume that the most important would be the cost of capital, therefore the model uses only this component.

Figures for calculating unit costs were provided by the Department of Public Works and Engineering and are listed in Appendix E. Costs were calculated for Scenario 2 only because this scenario is built on the assumption of additional infrastructure requirements, while Scenario 1 is not. Projects already in the CIP were not included in the estimates.

Holmes Micro-Area

Infrastructure costs in the Holmes micro-area were calculated primarily by extending the major thoroughfare grid as it is currently planned. This measurement method is based on the assumption that water and wastewater lines will follow the alignment of the thoroughfare extensions unless they already exist. An exception to this method is SH 288, which currently exists, but has no adjacent utility infrastructure to accommodate the development projected. Buffalo Speedway, Kirby and Almeda are all major north/south thoroughfares that would be extended based on Scenario 2. Reed and Airport Roads are east/west thoroughfares that would also be extended.

Mykawa Micro-Area

Infrastructure costs in the Mykawa micro-area were calculated based on the extension of East Orem and Fuqua Street (both east/west thoroughfares) as part of the completion of the currently planned major thoroughfare grid. There is a gap in the micro-areas between Cullen and Mykawa. In order to create connectivity and continuity of the thoroughfares between the micro-areas, the cost of constructing these roads is included.

Cullen Micro-Area

Cullen Micro-Area Infrastructure costs in the Cullen micro-area were calculated based on the extension of water lines along Scott (north/south) and Fuqua (east/west) as part of the currently planned major thoroughfare grid. Water and wastewater lines are assumed to follow the thoroughfare extensions unless they already exist in the right-of-way.

Telephone Micro-Area

No infrastructure estimates were made for the Telephone micro-area because adequate capacity already exists. Where small gaps exist, they would be filled in piecemeal as individual lots are developed.

Table 15: Estimated Infrastructure Costs
(in million of dollars)

Infrastructure	Scenario 2
Holmes Micro-area	
Water	\$10.4
Waste Water	\$ 6.3
Roads	\$22.9
Total	\$39.6
Mykawa Micro-area	
Water	-
Wastewater	\$ 4.0
Roads*	\$11.5
Total	\$15.5
Cullen Micro-area	
Water	\$ 3.4
Wastewater	\$ 4.2
Roads	-
Total	\$7.6

**Includes the cost of building the east segment of Airport Road and the east segment of Orem Road*

For the three micro-areas for which infrastructure costs were calculated, the street lengths were measured using the 1999 Major Thoroughfare and Freeway Plan. The infrastructure pipe lengths were measured using the Department of Public Works and Engineering GIMS database. Because two different sources were used, some discrepancies between road segment lengths and other infrastructure segment lengths may exist. These differences could come from measurement error or varying degrees of accuracy between the two information systems. Regardless, the differences are small enough that they should not significantly impact broad cost estimates such as these.

Table 16: Additional infrastructure costs (in millions)

Infrastructure	Scenario 2
• 288 to Mykawa (preliminary work and drainage	\$ 16.0
• Sims Bayou Channelization	\$ 2.0
• Sims Bayou Wastewater Treatment Plant Expansion	\$5.8
Total	\$23.8

Expansion of the Sims Bayou Treatment Plant

Sims Bayou wastewater treatment plant service area extends from Buffalo Bayou in the North to Clear Creek in the South. Holmes micro-area is totally within this service area, but only small portions of the Cullen micro-area are in the same service area.

According to Scenario 2 projections, Holmes would add about 3,300 and Cullen about 1,000 new population to the Sims Bayou plant service area. In addition, 9.5 million square feet of non-residential space would be added.

In 2010, the plant, with a capacity for processing 20 million gallons per day (MGD) of wastewater, is projected to operate at 93 percent capacity, 3 percent more than permitted by the Texas Natural Resources Conservation Commission. With a shortfall of 0.513 MGD, an expansion of 1 MGD was proposed. However, Scenario 2 projections would require capacity to be increased to 1.5 MGD. Taking into account both shortfalls ($0.513 + 1.5 = 2.013$ MGD), the plant must be expanded by at least 2.013 MGD instead of 1 MGD to accommodate projected growth in the Holmes and Cullen areas.

At \$2.8753 average capacity cost per gallon, the cost of expanding the treatment plant would be about \$5.8 million dollars.

Sources:

Population projections based on information from the UH Center for Public Policy, 1996.

Cost projections derived from City of Houston, "Update of the Water and Wastewater Impact Fee Program", April 2000, Pate Engineers.

Appendix A: Super Neighborhood Data

HOUSING: NUMBER OF UNITS AND PERCENT GROWTH By Super Neighborhood, 1990-2000

Super Neighborhood	Year 2000	Year 1990	1990-2000	
	Units	Units	Growth	Percent
Astrodome	9,004	7,899	1,105	14.0%
South main	2,730	2,953	(223)	-7.6%
Fondren Gardens	690	825	(135)	-16.4%
Central South West	12,753	12,185	568	4.7%
Fort Bend/Houston	9,921	8,916	1,005	11.3%
Sunnyside	7,611	7,857	(246)	-3.1%
South Park	7,335	7,681	(346)	-4.5%
Gofcrest/Reveille	8,011	8,261	(250)	-3.0%
Park place	3,212	3,545	(333)	-9.4%
Meadowbrook/Allendale	7,049	7,143	(94)	-1.3%
South Acres/Cresmont Park	6,659	6,434	225	3.5%
Minnetex	835	1,102	(267)	-24.2%
Greater Hobby	14,799	15,555	(756)	-4.9%
Edgebrook	7,163	7,250	(87)	-1.2%
Ellington/South Belt	13,887	13,713	174	1.3%
Clear Lake	23,644	20,790	2,854	13.7%
Total	135,303	132,109	3,194	2.4%

Total Units*	
Southern Houston, 1990	93,000
% of Super Neighb. Total	70.4%
Southern Houston, 2000	95,248

* Estimate

Housing: Number Of Vacant Units And Vacancy Rate

Super Neighborhood	1990		2000	
	Vacant Units	Vacancy Rate	Vacant Units	Vacancy Rate
Astrodome	711	9.0%	1,126	12.5%
South Main	236	8.0%	157	5.8%
Fondren Gardens	347	42.0%	44	6.4%
Central South West	1,706	14.0%	522	4.1%
Fort Bend/Houston	892	10.0%	326	3.3%
Sunnyside	1,493	19.0%	773	10.2%
South Park	1,229	16.0%	421	5.7%
Golfcrest/Reveille	1,239	15.0%	430	5.4%
Park Place	1,028	29.0%	254	7.9%
Meadowbrook/Allendale	929	13.0%	349	5.0%
S. Acres/Crestmont Park	1,094	17.0%	547	8.2%
Minnetex	264	24.0%	84	10.1%
Greater Hobby	2,489	16.0%	923	6.2%
Edgebrook	870	12.0%	428	6.0%
Ellington/South Belt	823	6.0%	772	5.6%
Clear Lake	1,247	6.0%	1,202	5.1%
TOTAL	16,596	12.6%	8,358	6.2%

Vacant Housing*	
Vacant Housing, SN, 1990	19,596
Southern Houston, 1990	12,996
	66.3%
Southern Houston 2000	5,543
Vacancy Rate	5.8%

* Estimate

Source: Houston Planning and Development Department based on 2000 Population Census

Appendix B: Methodology for Cost/Revenue Analysis

Objective and Overview

- The purpose of this analysis is to calculate city costs and revenues of building public infrastructure (roads, water and wastewater) in four small areas of Southern Houston. Of these areas, two are predominantly industrial (Holmes and Mykawa Roads), one is mainly commercial (Telephone-Bellfort Roads), and one is predominantly residential (Cullen Blvd). See maps.
- The two industrial areas selected have large amounts of vacant land that could be developed if sufficient infrastructure was provided; the commercial and residential areas are along major thoroughfares with some amount of vacant land and a potential for rehabilitation.
- Holmes, Mykawa and Cullen micro-area boundaries are based on TAZ (Traffic Analysis Zones), although zip codes, census tracts boundaries and land uses were taken into consideration in defining these boundaries. The Telephone-Bellfort micro-area focuses on a commercial corridor and does not follow TAZ, Zip Codes or census tracts boundaries.
- Costs were defined as those accrued from building infrastructure.
- Revenues were defined as those the city would receive if new development of vacant land took place as a result of infrastructure investment.

Projections of land use, population and employment

Land uses, population and employment were projected for the four areas with a horizon extending to 2020 from the 1999 base-year. Projections were based on two scenarios: in Scenario 1, development would follow TAZ 2020 projections; in Scenario 2, trends would be modified through planning intervention with infrastructure investment guiding development.

The following information was used:

- 1999 HCAD provided basic square footage for categories of land use, including vacant land.

- TAZ information was used for employment and population projections. TAZ information is available by census tracts for 1990, 1999 and 2020.
- For the 1999 base-year, 1999 TAZ population estimates were used for Cullen and Mykawa micro-areas. For the Holmes and Telephone-Bellfort micro-areas, population was estimated taking into account the number of housing units, vacancy rate and size of household.
- Employment estimates were based on 1999 TAZ estimates, except for Telephone-Bellfort, for which employment figures were based on HCAD, using building square feet and applying a ratio of employees per square foot provided by the Urban Land Institute (ULI) with a vacancy rate.

Both scenarios assume that no major economic change would occur during the 1999-2020 period. Projections for the four areas were calculated as follows:

a) Projections for Scenario 1:

Employment:

- Final projections were based on TAZ numbers, except for Telephone-Bellfort figures derived using HCAD information and ULI factor rates.
- The model used current trends to allocate land use. Trends in building permits were analyzed for the years 1992 to 1999. In addition, square footage from year 2000 building permits and plat information were taken into consideration.

Population:

- Final projections were based on 2020 TAZ numbers, except for Holmes and Telephone-Bellfort Roads, which were derived using housing units, housing vacancy rate and size of household.

b) Projections for Scenario 2:

- For Scenario 2, adjusted growth rates based on TAZ projections for population and employment for Harris County, were applied to the areas. Then, the employment and population figures obtained were converted into residential and non-residential square feet using ULI factors and FAR (Floor Area Ratio).

Employment

- A projected total build-out was developed as a control mechanism and to provide the proportion of employment by different types of non-residential land uses.
- Projected growth rate derived from TAZ projections for Harris County was adjusted based on assumptions for the areas.

- 2020 projected square footage of non-residential land uses was apportioned to undeveloped land. Then, the proportion of employment obtained under build out conditions was applied to 2020 projected land uses to obtain projected employment numbers for the end year.

Population

- Population was checked against TAZ projections to obtain a plausible rate of increase and was derived by assuming an average lot size and an average household size.

Revenues

- New development generates taxes that are revenues for the local government. To calculate revenues, three types of taxes were considered: property, sales and hotel taxes. It is assumed that local tax revenues will increase at a constant annual rate during the 21- year period.
- From tax revenues, Homestead exemptions were deducted for residential units and a 90 percent collection rate was applied.
- Institutional structures were considered exempt and all other uses taxable.
- To calculate sales and hotel taxes, a vacancy rate was applied to the total number of retail and hotel structures (see attached table).

Costs

- The cost of providing water, wastewater and roads was calculated by estimating the investment needed to expand roads and utility networks. The cost of expanding treatment plants was also added.
- There are three components of cost: capital, maintenance and interest rate to pay for the investment during a period of time. In a simplified version we could assume that the most important cost would be capital, therefore using only the first component in our model.
- Costs were calculated for scenarios one and two for each of the four areas for a 21-year period.
- As a final step, cost of building essential infrastructure was compared with the return in revenues; the results are shown in the spreadsheets.

Appendix C. Projected Population, Employment, Land Uses, Revenues and Costs by Micro Area

Holmes Road Micro-Area

1. Base-Line Land Use, Population and Employment Estimates: Holmes Micro-Area

To establish 1999 base-line data for the Holmes Micro-Area, 1999 Harris County Appraisal District (HCAD) information regarding land use, number of housing units and non-residential building square footage was analyzed.

Population was estimated from the average city occupancy rate (91.4%) multiplied by the number of housing units and then by the city mean household size in 1998 (2.6 persons per household.) Employment is based on Traffic Analysis Zones (TAZ) data.

Scenario 1 assumes that current land uses, population and employment trends will continue to the year 2020. **Scenario 2** assumes that, with City intervention, a shift in development will occur.

The following table summarizes the basic information.

Table C1: Holmes Micro-Area Growth Summary: In Units and Square Feet (sf) of Built Space

Land Use	1999 Base	Scenario 1	Scenario 2
Industrial	5,428,393	19,913,726	-3,928,501
Institutional	51,304	103,430	1,020,047
Retail	489,232	986,299	-17,837
Office	274,786	553,973	6,153,322
Number of Residential Units	705	1,148	1,613
Population	1,674	1,310	3,326
Employment	15,416	7,907	12,332

Scenario figures shown are increments over a 21-year period from the 1999 base

Table C2: Developed and Undeveloped Land (sf) and Number of Housing Units, 1999 Holmes Micro-Area

Undeveloped Land	206,178,624
Developed Land	57,124,058
Industrial	24,830,471
Commercial	10,426,365
Institutional	506,553
Residential	1,892,523
Other	19,467,846
Number of Housing Units	705

Land square feet are calculated using ArcView summaries based on 1999 HCAD data. Commercial land uses include office, retail and hotel. Residential includes multi and single- family land uses.

The number of housing units is calculated from HCAD and includes multi and single-family residential units. In addition, mobile home park units were calculated at 8 units per acre, according to the Planning and Development Department, Development Services.

2. 2000-2020 Population and Employment Projections: Holmes Micro Area

In **Scenario 1** industrial land uses (including warehouses and manufacturing) are expected to expand. Resident population, although increasing, would continue to be fairly small.

In **Scenario 2** heavy industrial land uses would substantially decrease and retail also would experience a small decrease in area. Office, light industrial, activities connected with research and development and residential uses would increase.

A. Scenario 1 Projections

- ✓ *Population projections* were based on past trends defined by building permits and platting information between 1992 and 1999.
- ✓ *Employment projections* were based on TAZ data.
- ✓ The projected increments in population were converted into residential units using household size and vacancy rate.
- ✓ The employment increment was converted into building square footage for each land use category using base-line land use proportion, square footage per employee factors and vacancy rates.

Population

- In 2000, 37,183 square feet of building space was permitted in the micro-area.
- Between 1998 and 2000, 1,560,633 square feet of land were platted for future development and in 2000, 1,623,046 square feet were platted.
- The average residential lot area was 6,500 sf.
- Square feet of land to be developed were converted into number of units by dividing the total amount of land by the average residential lot area: 490 units between 1998 and 2000.
- Using permit information data from 1995 to 2000 by zip codes, it was calculated that an average of 77 housing units would be developed per year.
- Using data from HUD for 1997, the vacancy rate for the area was estimated to be 9.6 percent. Thus, in 2020, 443 units are projected to be added to the 1999 base of 705.
- With an average household size of 2.6, population was projected to be **2,985** in 2020.

Employment

- The projected TAZ employment in 2020 is 23,323 (see Table C5).

B. Scenario 2 Projections

Population was checked against TAZ projections to obtain a plausible rate of growth and derived by assuming an average lot size and average household size.

Population

- It is assumed that with induced growth and new development, population in the Holmes area would reach 5,000 by 2020.

Employment

- 1999 TAZ estimate is 15,516 employees.
- Scenario 2 projects 27,748 employees in 2020, an increase of 12,332 employees from 1999.

Table C3: Holmes Micro-Area: Projection of Number of Employees by Land Use, 2020

Land Use	Total Build-up (sf)*	sf per Employee Factor	Proportion	Vacancy Rate	New Building sf	Employees
Industrial	8,247,145	500	4%	10%	666,819	1,200
Institut.	10,308,931	500	5%	10%	833,524	1,500
Retail	5,154,466	360	4%	10%	416,762	1,042
Office	82,471,450	250	87%	10%	6,668,189	24,005
Total						27,748

*Maximum capacity that the area could sustain

Table C4: Apportionment of Undeveloped Land by Land Uses, 2020

Land Uses	Undeveloped Land	Apportion.	Land sf	FAR	Unit/Bldg sf
Office	206,178,624	0.5	103,089,312	0.8	82,471,450
Retail		0.05	10,308,931	0.5	5,154,466
Industrial		0.1	20,617,862	0.4	8,247,145
Institutional		0.1	20,617,862	0.5	10,308,931
Hotel		0.03	6,185,359	0.8	4,948,287
Open Space		0.02	4,123,572	0	4,123,572
Res. Units		0.2	41,235,725	6,500	6,344

- Apportionment was based on a total build-up of undeveloped land. Total build-up is the maximum capacity that the land could sustain at present densities. The total build-up figure was developed taking into consideration land uses that would expand if infrastructure investments were implemented.
- Open space assumed no FAR
- Residential uses assumed 6,500 sf per lot.

Table C5: Employment by TAZ, 1990, 1999 and 2020

Census Tracts 1990	TAZ 1998	1990 Total Employment	1999 Total Employment	2020 Total Employment
32901	575	392	576	1,077
32901	576	1,214	931	2,294
32902	578	307	1,191	1,226
32903	580	119	87	118
32200	593	201	538	782
32200	594	2,907	5,738	8,919
32200	595	5	4,263	4,319
32200	596	1,344	667	1,470
32200	598	127	176	369
33901	624	955	898	2,134
33901	625	0	0	180
33902	626	45	32	61
33902	627	265	319	374
Total		7,881	15,416	23,323

Source: HGAC

Mykawa Road Micro-Area

1. Base-Line Land Uses, Population and Employment Estimates: Mykawa Micro Area

Base-line data regarding land use, number of housing units and non-residential square footage for the Mykawa Micro-Area was based on 1999 HCAD information. Population for 1999 was estimated from the area's occupancy rate (21.6%) multiplied by the number of housing units and then by the City mean household size in 1998 (2.6). 1999 Employment was based on TAZ data.

Scenario 1 assumed that current trends of land uses and population will continue in the future. **Scenario 2** assumed that, with City intervention, a shift in development will occur.

The following table summarizes the basic information.

Table C6: Mykawa Micro-area Growth Summary: In Units and Square Feet of Built Space

Land Use	1999 base	Scenario 1	Scenario 2
Industrial	2,556,317	6,549,139	6,274,510
Institutional	8,748	22,412	224,090
Retail	247,812	634,880	394,398
Office	56,307	144,255	537,815
Residential Units	601	1,099	1,161
Population	1,225	1,211	2,375
Employment	6,377	2,319	3,223

Scenario figures shown are increment over a 21-year period from 1999 base

Table C7: Mykawa Micro-Area, Developed and Undeveloped Land (sf) and Number of Housing Units, 1999

Undeveloped Land	63,671,531
Developed Land	73,369,711
Industrial	22,136,902
Commercial	2,436,463
Institutional	1,421,642
Residential	12,955,360
Other	34,419,344
Number of Housing Units	601

- Land square feet are calculated from ArcView GIS summaries based on 1999 HCAD. Commercial land uses include office, retail and hotel. Residential includes multi and single-family land uses.
- The number of residential housing units is calculated from HCAD and includes multi and single-family residential units. In addition, mobile home park units were calculated at 8 units/acre according to the Planning and Development Department, Development Services Division. Vacancy Rate is derived from 1997 HUD data by census tracts.

2. 2000- 2020 Population and Employment Projections: Mykawa Micro Area

In **Scenario 1** industrial land uses, especially near Hobby Airport, will expand with additional retail and a substantial increase in population.

In **Scenario 2**, with City intervention, industrial uses will diminish slightly and will be replaced by office, light industrial and institutional uses.

A. Scenario 1

- Population and employment projections were based on TAZ numbers.
- Projected increment in population was converted into residential units using household size and vacancy rate.
- Employment increment was converted into building square footages for each land use category using base-line land use proportion.

Population

TAZ projected population 2020: 2,436.

Employment

TAZ projected employment: 8,696 (2,319 added to 1999 base).

Table C8: Land Uses, New Building Square Footage Added by 2020

	Building sf	sf /Emp	1999 Emp	Percent	# New Emp	Vacancy Rate	New Building sf
Industrial	21,976,515	500	43,953	82%	7108	10%	3,948,655
Institutional	1,421,642	500	2,843	5%	460	10%	255,435
Retail	2,120,850	360	5,891	11%	953	10%	381,066
Office	272,053	250	1,088	2%	176	10%	48,881

- Building square footage was calculated using the 1999 HCAD database.
- Employment Factor is the number of employee per square feet, based on Urban Land Institute (ULI) rates.
- Number of Employees was calculated by multiplying the employment factor for the square feet in a specific land use category; for the Mykawa micro-area the total number of employees derived by applying employment factors is 53,776.
- New Building square footage was obtained by applying a vacancy rate of 10 percent to gross square feet derived from new employment.

B. Scenario 2

Population was checked against TAZ projections to obtain a plausible rate of increase and derived by assuming an average lot size and an average household size.

Population

- It was assumed that with induced growth and development, population in the Mykawa area would reach 3600 by 2020.

Employment

- 1999 TAZ estimate is 6377 employees.
- Scenario projection for 2020 is 9,601, therefore the area would add 3,223 more employees by 2020.

Table C9: Mykawa Micro-Area: Projection of Number of Employees by Land Use, 2020

Land Uses	Total Build-out Building sf*	sf /Emp	Percent	Vacancy Rate	New Employees	New Building sf
Industrial	17,666,589	500	61%	10%	5,868	3,259,762
Institutional	1,104,162	500	4%	10%	367	203,735
Retail	2,208,325	360	11%	10%	1,019	407,470
Office	3,533,320	350	24%	10%	2,347	651,952
TOTAL					9,601	

*Maximum capacity that the area could sustain.

Table C10: Apportionment of Undeveloped Land, 2020

Land Uses	Apportion	Land SQ ft	FAR (Floor Area Ratio)	Unit/Bldg. sf
Undeveloped		73,610,823		
Office	0.06	4,416,649	0.8	3,533,320
Retail	0.06	4,416,649	0.5	2,208,325
Industrial	0.6	44,166,494	0.4	17,666,598
Institutional	0.03	2,208,325	0.5	1,104,162
Hotel	0		0.8	
Open Space/Vacant	0.02	1,472,216	0	1,472,216
Residential Units	0.23	16,930,489	6,500	2,605

- *Apportionment was based on a total build-up of undeveloped land. Total build-up is the maximum capacity that the land could sustain at the existing density. The total build-up figures were developed taking into consideration land uses that would expand if infrastructure investment were implemented.*
- *Open Space assumes no FAR and residential uses assume 6500 sf/lot.*

Table C11: Population by TAZ, 1990, 1999 and 2020

1990 Census Tract	1998 TAZ	HH 1990	HH Population 1990	HH 1999	HH Population 1999	HH 2020	HH Population 2020
34302	647	73	225	94	204	121	250
34400	648	201	573	198	488	329	752
34400	649	115	329	137	239	233	433
34501	651	184	546	283	713	416	1,001
Total		573	1,673	712	1,644	1,099	2,436

HH = Households

Source: Houston Galveston Area Council

Table C12: Mykawa Micro-Area: Employment by TAZ 1990, 1999 and 2020

1990 Census Tract	TAZ 1998	Total Employment 1990	Total Employment 1999	Total Employment 2020
34302	647	903	703	703
34400	648	1,388	4,543	5,905
34400	649	353	672	1,125
34501	651	374	459	963
Total		3,018	6,377	8,696

Source: Houston Galveston Area Council

Cullen Blvd. Micro-Area

1. Base-Line Land Use, Population and Employment Estimates: Cullen Micro Area

Base-line data for 1999 population is based on land use, number of housing units and non-residential building square footage obtained from 1999 Harris County Appraisal District (HCAD) database. Employment data is based on TAZ figures.

Scenario 1 assumes that current land uses, population and employment trends will continue to the year 2020. **Scenario 2** assumes that, with City intervention, development will increase at a higher rate and redevelopment will take place, with an increasing amount of undeveloped land converted into parks and open space.

For data collection and analysis purposes, the Cullen micro-area was divided into four small sections. The results of the analysis have been combined in the following tables.

Table C13: Cullen Micro-Area Growth Summary: In Units and Square Feet of Built Space

Land Use	1999 Base	Scenario 1*	Scenario 2*
Industrial	498,249	71,120	105,105
Institutional	254,099	127,884	270,451
Retail	908,881	216,547	412,455
Office	26,978	17,852	48,276
Hotel	123,244	29,754	54,583
Parks	7,444	0	10,542,639
Residential Units	14,860	916	4,483
Population	43,895	2,673	13,316
Employment	7,352	794	1,631

Scenario figures shown are Increments over a 21- year period from the 1999 base

Table C14: Developed and Undeveloped land (in sq. ft.), 1999

Undeveloped Land	130,172,522
Developed Land	137,598,800
Industrial	8,029,925
Commercial	5,806,682
Institutional	11,884,287
Residential	111,877,906
Other	21,396,311

- Land area is calculated from ArcView Summaries based on 1999 HCAD information.
- Commercial land use includes office, retail and hotel. Residential includes multi and single-family uses.
- The number of housing units is calculated from HCAD information and includes multi and single-family residential units.

2. 2000-2020 Population and Employment Projections: Cullen Micro Area

A. Scenario 1

Population projection was based on TAZ figures for 2020: 46,568 (see table C7).

- **Employment projection** was also based on TAZ figures for 2020: 8,146 (see table C8).
- The projected increment in population was converted into residential units using household size and vacancy rate, in accordance with the assumptions of Table C3.

Table C15: Population Assumptions

SF household size	3.5 person/HH
MF household size	3 person/HH
SF housing density	6 units/acre
MF Housing density	40 units/acre
Housing vacancy rate	10%

The employment increment was converted into building square footage for each land use category using base-line land use proportion, square footage per employee factors and vacancy rate, in accordance with the assumptions of Table 4.

Table C16: Employment Assumptions

Employment assumptions	FAR	sf/Employee	Vacancy Rate
Retail/Service	0.5	360	0.2
Office	0.8	250	0.2
Industrial	0.3	1500	0.3
Hotel	1	1000	0.4
Institutional	0.5	500	0.2

B. Scenario 2

Population and employment projections were based on growth rates similar to the Harris County average. The general assumption for Scenario 2 was that the Cullen micro-area could grow more or less at a similar rate as the Harris County average provided that there is sufficient developable land. Due to varying degrees of development potential in the zones based on elements such as availability of vacant land, parcel sizes, existing land use, and growth rates assumed for each development analysis zone were different. Zones 1 and 3 assumed the same population growth rate as the Harris County (26%), while Zone 2 assumed half the Harris County's rate and Zone 4 assumed double the rate.

Table C17: Population and Employment Increase Rate for Harris County and Cullen Micro-Area (1990-2020), by zones

	Increase rate (1990-2020)	
	Population Rate of Increase	Employment Rate of Increase
County	0.258	0.264
Zone 1	0.054	0.104
Zone 2	0.048	0.162
Zone 3	0.087	0.006
Zone 4	0.054	0.120

Population

- Projected increment in population was converted into residential units using household size and vacancy rate (as in Scenario 1).

Employment

- The employment increment was converted into building square footage for each land-use category using a modified land-use scenario, square footage per employee factors and vacancy rates.

Table C18: Projected Future Land Use using a Modified Land-use Scenario, 2020

Land Use	Projected Land Build-Up (sf)	Proportion	New Building (sf)
In Industrial	12,278,313	9%	3,683,493
Institutional	13,957,188	11%	6,979,194
Retail	24,013,202	18%	12,006,602
Hotel	1,210,357	1%	1,210,357
Office	2,272,702	2%	1,818,161
Total Undeveloped Land:		130,172,522	

Table C19: Cullen Blvd. Micro-Area: Household Population by Traffic Analysis Zones (TAZ), 1990, 1999 and 2020

TAZ	1990 Census Tracts	Household Population 1990	Household Population 1999	Household Population 2020
524	31803	2,668	3,017	3,153
572	32801	5,666	6,093	6,365
573	32802	3,679	3,799	3,987
574	32803	2,938	2,992	3,154
577	32902	1,414	1,473	1,553
579	32902	1,901	1,880	1,980
581	32903	2,539	2,538	2,665
628	33903	2,332	2,213	2,340
629	34000	1,636	1,690	1,846
630	34000	901	1,192	1,311
631	34000	3,760	3,794	4,100
635	34200	287	395	442
636	34200	158	112	156
637	34200	0	4	21
642	34301	2,708	2,859	3,081
644	34302	6,473	7,148	7,621
645	34302	1,074	1,268	1,365
Total		40,134	42,467	45,140

Source: HGAC

Telephone/Bellfort Micro-Area

1. Base-Line Land Use, Population and Employment Estimates: Telephone/Bellfort Micro Area

Population and employment estimates and projections for the Telephone/Bellfort micro- area are not based on TAZ data because the study area boundary did not coincide with TAZ boundaries. Instead, these estimates and projections are based on 1999 land use information from HCAD.

For data collection and analysis purposes, the population and employment indicators for Telephone Road were examined separately from those of Bellfort Road. The results have been summarized inTable C20.

Table C20: Telephone/Bellfort Micro-Area Growth Summary (units or millions of sf)

Landuse	1999 Base	Scenario 1	Scenario 2
SF units	620	30	140
MF units	1,260	85	370
Retail/Service sf	.224	.381	1.5234
Office sf	.160	.031	.125
Industrial sf	.374	.084	.335
Hotel sf	.220	.011	.046
Institutional sf	.414	.062	.247
Population	4,900	280	1,900
Employment	2,100	1,100	4,200

Note: Increment over 21 years from base

A. 1999 Telephone Road Base Data

Table C21: Land Use Distribution: Telephone Road, 1999

	Square Feet	Percentage of Study Area	Acreage	Units/Acre
SF	3,082,106	22%	71	3.58
MF	2,286,925	16%	53	16.06
Retail/Service	3,426,032	24%	79	
Office	632,467	4%	15	
Industrial	1,020,031	7%	23	
Institutional	1,117,780	8%	26	
Parks/OS		0%	0	
Utility	491,730	3%	11	
Undeveloped	2,254,433	16%	52	
Total	14,311,504	100%	329	

Source: 1999 HCAD

Land square footage is calculated from ArcView summaries based on 1999

HCAD data.

**Table C22: Telephone Road 1999 Base
Population:**

SF Units	253
MF Units	920
Total HH	1,173
Persons/HH	2.6
Vacancy Rate	10%
Total Pop.	3,050

1. Single Family (SF) and Multifamily (MF) units based on 1999 HCAD data
2. Vacancy rate is from 1997 HUD data
3. Population = Total HH x Persons/HH

2. Population and Employment Projections: Telephone/Bellfort Micro Area

For **Scenario 1**, it was assumed that 15 percent of the developable land, or 39.8 acres, would develop over the 21 years. A major increase is anticipated in retail/services and a much smaller increase in industrial, office and institutional uses.

For **Scenario 2**, it was assumed that 60 percent of the developable land, or 159 acres, will fill-in or rebuild over the 21 years. This scenario assumes an active city intervention in the overall revitalization of the corridor that would include beautification and removal of blight. A linear park is feasible in the undeveloped land along Sims Bayou at the Bellfort and Telephone Road intersection. This scenario expects a major population increase as a result of significant residential development and a tripling of employment. The scenario assumes that a corridor revitalization effort could bring back the Telephone/Bellfort corridors as a main street for the surrounding neighborhoods, providing ample neighborhood retail and services.

Table C23: Population Assumptions

SF HH size	2.6 persons
MF HH size	3 persons
SF Housing density	3.6 units per acre/ 12,182 sf land per unit
MF Housing density	17.5 units per acre/ 2,486 sf land per unit

1. HH size from 1997 HUD data
2. Housing densities derived from 1997 HUD data

Table C24: Employment Assumptions

	Vacancy Rate (1)	Floor Area Ratio (FAR) (2)	Square Feet Per Employee (3)
Retail/Service	31%	0.44	360
Office	11%	0.6	250
Light Indus	9%	0.69	750
Institutional	10%	0.51	500
Hotel	36%	0.66	1000

1. 1997 HUD data
2. Urban Land Institute
3. Urban Land Institute

Table C25: Telephone Road: 1999 Employment

	Total Bldg sf	Occupied Bldg sf	1999 Employees
Retail/Service	31,084	21448	60
Office	108,628	96679	387
Industrial	324,717	294843	393
Institutional	308,574	277717	278
Hotel	220,128	141542	283
Total			1400

Building square feet is derived from 1999 HCAD data.

Occupied Bldg square feet = total bldg sf – (total bldg sf x vacancy rate)

1999 Employees = Occupied Bldg sf / No. Employees per sf

Table C26: Developable Land (sf), Telephone Road 1999

Land Use	Square Feet	Distribution	% Redevelopable	Total Developable Land
SF	3,082,106	22%	0.25	770,527
MF	2,286,925	16%	0.25	571,731
Retail/Service	3,426,032	24%	0.25	856,508
Office	632,467	4%	0.25	158,117
Industrial	1,020,031	7%	0.25	255,008
Institutional	1,117,780	8%	0.25	279,445
Parks/OS		0%		
Utility	491,730	3%		
Undeveloped	2,254,433	16%		2,254,433
Total	14,311,504	1		2,891,335

Source: 1999 HCAD

Land square footage is calculated from ArcView summaries based on 1999 HCAD data.

Land use square footage was converted into number of residential units or building square feet. Then, household size, vacancy rates, floor-area-ratios, and square feet per employee were applied to project population and employment.

Table C27: Build Up Scenario, Telephone Road

Land Use	Apportion	Land sf	Units & Building sf	60% Build-up	Occupied
<i>Retail/Service</i>	50%	1,445,668	636,094	381,656.25	263,343
Office	3%	86,740	52,044	31,226.42	27,792
Light Indus	7%	202,393	139,651	83,790.90	76,082
Hotel	1%	28,913	19,083	11,449.69	10,305
Institutional	7%	202,393	103,221	61,932.40	39,637
Parks/OS	8%	231,307			
SF	17%	491,527	40		
MF	7%	202,393	81		

- *Land Square Foot Allocation = Apportion x Total Developable Land*
- *Building Square Feet = Land Square Foot Allocation x Floor Area Ratio (see Table 3)*
- *Units = Land Square Foot Allocation / Housing Density (see Table 2)*
- *60% buildout = building square feet x .60*
- *Occupied = units and building square feet – vacant square feet*

Table C28: Scenario 2 Projected Population and Employment, Telephone Road, 2020

Land Use	Number of residents	Land Use	Share of employees among land uses	Number of new employees in in Micro-Area
Single-Family	108	Retail/Service	71%	731.51
Multi-Family	244	Office	11%	111.17
		Light industrial	10%	101.44
		Hotel	1%	10.30
		Institutional	8%	79.27
Total	352	Total	100%	1,033.69

B. 1999 Bellfort Road Base-Line Data

Table C29: Developable Land (sf), Belfort Road 1999

	Square Feet	Distribution	Ratio of Redevelopable Land	Total Developable Land
SF	31,585,468	84%	0.25	7,896,367
MF	423,986	1%	0.25	105,997
Retail/Service	1,002,740	3%	0.25	250,685
Office	200,650	1%	0.25	50,163
Industrial	118,145	0%	0.25	29,536
Institutional	1,276,022	3%	0.25	319,006
Parks/OS		0%		
Utility		0%		

Undeveloped	3,169,506	8%		3,169,506
Total	37,776,517	100%		8,651,753

Land square footage is calculated from ArcView summaries based on 1999 HCAD data.

**Table C30: Base-Line Population,
Belfort Road 1999**

SF Units	365
MF Units	342
Total HH	707
Persons/hh	2.6
Vacancy Rate	10%
Total Pop	1,838
Total Emp	705

- a) *Single Family (SF) and Multifamily (MF) units based on 1999 HCAD data*
b) *Vacancy rate is from 1997 HUD data*
c) *Population = Total HH x Persons/HH*

2. 2020 Population and Employment Projections: Bellfort Road

**Table C31: Population Assumptions,
Belfort Road**

SF HH size	2.6
MF HH size	2.17
SF Housing density	5.0 units/acre
MF Housing density	35.0 units/acre

Employment Assumptions for Bellfort Road are the same as for Telephone Road. (See Table C25).

Table C32: Total Build Up Scenario in non-infill areas, Belfort Road

Use	Apportion	Land sf Allocation	Units & Building sf	0.6	Occupied (-vacancy)
Retail/Service	50%	4,325,876	1,903,386	1,142,031.36	788,002
Office	3%	259,553	155,732	93,438.93	83,161
Light Indust.	7%	605,623	417,880	250,727.79	227,661
Hotel	1%	86,518	57,102	34,260.94	34,261
Institutional	7%	605,623	308,868	185,320.54	166,788
Parks/OS	8%	692,140			
SF	17%	1,470,798	169	101.29	
MF	7%	605,623	487	291.97	

Land Square Foot Allocation = Apportion x Total Developable Land

Building Square Feet = Land Square Foot Allocation x Floor Area Ratio (see Table3)

Units = Land Square Foot Allocation / Housing Density (see Table 2)

Occupied = units and building square feet – vacant square feet

Table C33: Scenario 2 Projected Population and Employment, Belfort Road, 2020

	Number of Residents	Land Use	Share of employees among land uses	Number of new employees in study area
SF	451	Retail/Service	69%	2,189
MF	1056	Office	10%	333
		Light industrial	10%	304
		Other	1%	34
		Institutional	10%	334
Total	1,507	Total	100%	3,193

Table C34: Employment by Traffic Analysis Zones (TAZ), 1990, 1999 and 2020

TAZ	1990 Census Tracts	Total Employment 1990	Total Employment 1999	Total Employment 2020
524	31803	249	371	407
572	32801	688	740	841
573	32802	400	312	378
574	32803	520	404	497
577	32902	428	319	388
579	32902	139	139	163
581	32903	688	555	657
628	33903	651	979	1,092
629	34000	136	417	418
630	34000	222	148	150
631	34000	559	253	255
635	34200	274	83	83
636	34200	102	33	33
637	34200	1	8	8
642	34301	396	100	100
644	34302	335	207	271
645	34302	803	1,110	1,231
Total		6,591	6,178	6,972

Source: HGAC

APPENDIX D: Revenue Analysis

NOTE:

Revenue Tables for Mykawa, Cullen and Telephone/Bellfort are being revised and will be added soon.

Chart : Holmes Micro Area Scenario

Holmes Micro-Area Scenario 1

Base Year (1999)			1999-2020			Base Assumptions:														
Land-use	Units/Bdg Sqft		Projected Total New Units	%change	Annual % Increase															
SF	705 units		1,148	1.62837	1.047	Annual growth rate is constant No economic changes in the real estate market throughout the projected period No increase in ad valorem property tax rates, sales tax rates, or hotel occupancy tax rates All single-family units, including condominiums, are homestead properties All institutional structures are tax exempt All commercial square footage generates sales tax All office square footage is taxable														
MF	- units																			
Retail/Service	489,232 sqft		506,048	1.03437	1.034															
Office	274,786 sqft		399,743	1.45474	1.044															
Industrial	5,428,393 sqft		5,534,900	1.01962	1.034															
Hotel	- sqft				-															
Hotel/Lodging	-		-		-															
Year	yr	SF		MF		Retail/Service			Office		Industrial		Hotel		Total Property Tax	Total Consumer	Total fiscal revenue			
		# of unit	prop tax rev	# of unit	prop tax rev	sqft	prop tax	sales tax	sqft	prop tax	sqft	prop tax			Property Tax	Consumer Tax	All Taxes			
1999	0	-	\$ -	-	\$ -	-	\$ -	\$ -	-	\$ -	-	\$ -	-	\$ -	\$ -	\$ -	\$ -			
2000	1	33	\$ 13,920	-	\$ -	16,828	\$ 4,885	\$ 33,550	12,006	\$ 4,259	184,774	\$ 23,838	-	\$ -	\$ 46,902	\$ 33,550	\$ 80,452			
2001	2	68	\$ 28,496	-	\$ -	34,235	\$ 9,937	\$ 68,253	24,536	\$ 8,705	375,837	\$ 48,487	-	\$ -	\$ 95,625	\$ 68,253	\$ 163,878			
2002	3	104	\$ 43,758	-	\$ -	52,240	\$ 15,164	\$ 104,151	37,613	\$ 13,344	573,403	\$ 73,975	-	\$ -	\$ 146,241	\$ 104,151	\$ 250,392			
2003	4	142	\$ 59,739	-	\$ -	70,865	\$ 20,570	\$ 141,283	51,262	\$ 18,187	777,695	\$ 100,330	-	\$ -	\$ 198,827	\$ 141,283	\$ 340,109			
2004	5	182	\$ 76,473	-	\$ -	90,131	\$ 26,163	\$ 179,692	65,507	\$ 23,240	988,940	\$ 127,583	-	\$ -	\$ 253,459	\$ 179,692	\$ 433,151			
2005	6	224	\$ 93,994	-	\$ -	110,059	\$ 31,947	\$ 219,423	80,375	\$ 28,515	1,207,375	\$ 155,763	-	\$ -	\$ 310,220	\$ 219,423	\$ 529,643			
2006	7	268	\$ 112,341	-	\$ -	130,673	\$ 37,931	\$ 260,520	95,892	\$ 34,020	1,433,246	\$ 184,903	-	\$ -	\$ 369,195	\$ 260,520	\$ 629,715			
2007	8	314	\$ 131,552	-	\$ -	151,996	\$ 44,120	\$ 303,030	112,087	\$ 39,766	1,666,805	\$ 215,035	-	\$ -	\$ 430,472	\$ 303,030	\$ 733,503			
2008	9	362	\$ 151,667	-	\$ -	174,052	\$ 50,522	\$ 347,003	128,990	\$ 45,763	1,908,314	\$ 246,192	-	\$ -	\$ 494,144	\$ 347,003	\$ 841,147			
2009	10	412	\$ 172,730	-	\$ -	196,867	\$ 57,145	\$ 392,489	146,631	\$ 52,021	2,158,043	\$ 278,409	-	\$ -	\$ 560,305	\$ 392,489	\$ 952,794			
2010	11	465	\$ 194,784	-	\$ -	220,466	\$ 63,995	\$ 439,539	165,043	\$ 58,553	2,416,273	\$ 311,723	-	\$ -	\$ 629,057	\$ 439,539	\$ 1,068,595			
2011	12	520	\$ 217,878	-	\$ -	244,877	\$ 71,081	\$ 488,207	184,259	\$ 65,371	2,683,293	\$ 346,172	-	\$ -	\$ 700,501	\$ 488,207	\$ 1,188,709			
2012	13	577	\$ 242,058	-	\$ -	270,128	\$ 78,411	\$ 538,550	204,315	\$ 72,486	2,959,402	\$ 381,792	-	\$ -	\$ 774,748	\$ 538,550	\$ 1,313,298			
2013	14	638	\$ 267,378	-	\$ -	296,248	\$ 85,993	\$ 590,624	225,247	\$ 79,913	3,244,908	\$ 418,626	-	\$ -	\$ 851,909	\$ 590,624	\$ 1,442,532			
2014	15	701	\$ 293,890	-	\$ -	323,266	\$ 93,835	\$ 644,489	247,094	\$ 87,663	3,540,133	\$ 456,713	-	\$ -	\$ 932,101	\$ 644,489	\$ 1,576,590			
2015	16	767	\$ 321,650	-	\$ -	351,213	\$ 101,948	\$ 700,207	269,895	\$ 95,753	3,845,408	\$ 496,096	-	\$ -	\$ 1,015,446	\$ 700,207	\$ 1,715,653			
2016	17	836	\$ 350,717	-	\$ -	380,122	\$ 110,339	\$ 757,842	293,692	\$ 104,195	4,161,073	\$ 536,820	-	\$ -	\$ 1,102,072	\$ 757,842	\$ 1,859,913			
2017	18	909	\$ 381,154	-	\$ -	410,025	\$ 119,019	\$ 817,458	318,529	\$ 113,007	4,487,482	\$ 578,930	-	\$ -	\$ 1,192,110	\$ 817,458	\$ 2,009,568			
2018	19	985	\$ 413,024	-	\$ -	440,956	\$ 127,998	\$ 879,126	344,451	\$ 122,204	4,825,003	\$ 622,474	-	\$ -	\$ 1,285,698	\$ 879,126	\$ 2,164,824			
2019	20	1,065	\$ 446,394	-	\$ -	472,952	\$ 137,285	\$ 942,915	371,506	\$ 131,802	5,174,011	\$ 667,499	-	\$ -	\$ 1,382,980	\$ 942,915	\$ 2,325,895			
2020	21	1,148	\$ 481,336	-	\$ -	506,048	\$ 146,892	\$ 1,008,898	399,743	\$ 141,820	5,534,900	\$ 714,057	-	\$ -	\$ 1,484,105	\$ 1,008,898	\$ 2,493,003			
total			\$ 4,494,934				\$ 1,435,179	\$ 9,857,248		\$ 1,340,587		\$ 6,985,416			\$ 14,256,117	\$ 9,857,248	\$ 24,113,365			
Note: Consumer Tax includes sales tax and hotel occupancy tax																				
Assumptions:			Source:																	
Projection time frame		21 years	City of Houston P&D assumption																	
Ad valorem property tax rate		\$ 0.665 per \$100 valuation	City of Houston																	
Rate of collection		97%	Harris County Appraisal District																	
Homestead exemption rate		20%	Harris County Appraisal District																	
HISD Homestead ex amount		\$ 15,000	Harris County Appraisal District																	
SF construction cost		\$ 100,000 per unit	Conservative estimate based on Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average (\$159,926)																	
MF construction cost		\$ 46,700 per unit	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average																	
Retail/Service		\$ 45 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average																	
Office		\$ 55 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average																	
Industrial		\$ 20 per sqft	Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average																	
Hotel		\$ 40 per sqft	Based on construction costs of comparables for year 2000 (Comfort Inn, Ramada motels)																	
Hotel room		600 sqft per room	City of Houston P&D assumption																	
Retail occupancy rate		90%	City of Houston P&D assumption																	
Retail sales generated		\$ 221.52 per 1sqft	O'Connor and Associates																	
Sales tax rate		1%	City of Houston																	
Hotel night rate		\$ 70	O'Connor and Associates																	
Hotel occupancy rate		63%	O'Connor and Associates																	
Hotel occupancy tax rate		7%	City of Houston																	

Chart : Holmes Micro Area Scenario 2

Holmes Micro-Area Senario 2																		
Base Year (1999)				1999-2020				Base Assumptions:										
Land-use	Units/Bdg			Projected Total	%change	Annual %		Annual growth rate is constant										
	Sqft			New Units		Increase		No economic changes in the real estate market throughout the projected period										
SF	705	units		1,613	2.28794	1.058		No increase in ad valorem property tax rates, sales tax rates, or hotel occupancy tax rates										
MF	-	units		-	-	-		All single-family units, including condominiums, are homestead properties										
Retail/Service	489,232	sqft		879,905	1.79854	1.050		All institutional structures are tax exempt										
Office	274,786	sqft		2,799,697	10.18864	1.122		All commercial square footage generates sales tax										
Industrial	5,428,393	sqft		2,333,081	0.42979	1.017		All office square footage is taxable										
Hotel	-	sqft		-	-	-												
Hotel/Lodging	-			-	0	-												
Year		yr		SF		MF		Retail/Service		Office		Industrial		Hotel		Total Property Tax	Total Consumer	Total fiscal revenue
		# of unit	prop tax rev	# of unit	prop tax rev	sqft	prop tax	sales tax	sqft	prop tax	sqft	prop tax				Property Tax	Consumer Tax	All Taxes
1999	0	-	\$ -	-	\$ -	-	\$ -	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	\$ -	\$ -
2000	1	41	\$ 17,238	-	\$ -	24,572	\$ 7,133	\$ 48,988	33,488	\$ 11,881	93,211	\$ 12,025	-	\$ -	\$ 48,276	\$ 48,988	\$ 97,265	
2001	2	85	\$ 35,481	-	\$ -	50,378	\$ 14,623	\$ 100,437	71,056	\$ 25,209	188,022	\$ 24,257	-	\$ -	\$ 99,570	\$ 100,437	\$ 200,007	
2002	3	131	\$ 54,788	-	\$ -	77,480	\$ 22,490	\$ 154,470	113,203	\$ 40,162	284,461	\$ 36,698	-	\$ -	\$ 154,139	\$ 154,470	\$ 308,609	
2003	4	179	\$ 75,221	-	\$ -	105,943	\$ 30,752	\$ 211,217	160,487	\$ 56,937	382,556	\$ 49,354	-	\$ -	\$ 212,264	\$ 211,217	\$ 423,481	
2004	5	231	\$ 96,846	-	\$ -	135,836	\$ 39,429	\$ 270,813	213,533	\$ 75,757	482,336	\$ 62,226	-	\$ -	\$ 274,258	\$ 270,813	\$ 545,071	
2005	6	286	\$ 119,731	-	\$ -	167,230	\$ 48,542	\$ 333,404	273,043	\$ 96,870	583,829	\$ 75,320	-	\$ -	\$ 340,463	\$ 333,404	\$ 673,866	
2006	7	343	\$ 143,951	-	\$ -	200,201	\$ 58,113	\$ 399,137	339,806	\$ 120,556	687,064	\$ 88,638	-	\$ -	\$ 411,258	\$ 399,137	\$ 810,395	
2007	8	404	\$ 169,584	-	\$ -	234,828	\$ 68,164	\$ 468,172	414,705	\$ 147,128	792,072	\$ 102,185	-	\$ -	\$ 487,062	\$ 468,172	\$ 955,234	
2008	9	469	\$ 196,712	-	\$ -	271,194	\$ 78,720	\$ 540,675	496,732	\$ 176,939	898,884	\$ 115,965	-	\$ -	\$ 568,336	\$ 540,675	\$ 1,109,011	
2009	10	538	\$ 225,421	-	\$ -	309,387	\$ 89,807	\$ 616,819	593,000	\$ 210,383	1,007,529	\$ 129,981	-	\$ -	\$ 655,592	\$ 616,819	\$ 1,272,410	
2010	11	610	\$ 255,805	-	\$ -	349,498	\$ 101,450	\$ 696,787	698,755	\$ 247,903	1,118,040	\$ 144,238	-	\$ -	\$ 749,395	\$ 696,787	\$ 1,446,182	
2011	12	687	\$ 287,960	-	\$ -	391,623	\$ 113,677	\$ 780,772	817,399	\$ 289,995	1,230,448	\$ 158,740	-	\$ -	\$ 850,372	\$ 780,772	\$ 1,631,144	
2012	13	768	\$ 321,991	-	\$ -	435,865	\$ 126,520	\$ 868,975	950,501	\$ 337,216	1,344,787	\$ 173,491	-	\$ -	\$ 959,217	\$ 868,975	\$ 1,828,192	
2013	14	854	\$ 358,006	-	\$ -	482,328	\$ 140,007	\$ 961,607	1,099,824	\$ 390,193	1,461,089	\$ 188,495	-	\$ -	\$ 1,076,700	\$ 961,607	\$ 2,038,308	
2014	15	945	\$ 396,121	-	\$ -	531,125	\$ 154,171	\$ 1,058,893	1,267,345	\$ 449,626	1,579,388	\$ 203,757	-	\$ -	\$ 1,203,675	\$ 1,058,893	\$ 2,262,567	
2015	16	1,041	\$ 436,460	-	\$ -	582,372	\$ 169,047	\$ 1,161,064	1,455,282	\$ 516,301	1,699,718	\$ 219,281	-	\$ -	\$ 1,341,088	\$ 1,161,064	\$ 2,502,153	
2016	17	1,143	\$ 479,150	-	\$ -	636,194	\$ 184,670	\$ 1,268,368	1,666,122	\$ 591,103	1,822,115	\$ 235,071	-	\$ -	\$ 1,489,993	\$ 1,268,368	\$ 2,758,361	
2017	18	1,251	\$ 524,330	-	\$ -	692,719	\$ 201,077	\$ 1,381,060	1,902,657	\$ 675,020	1,946,613	\$ 251,133	-	\$ -	\$ 1,651,560	\$ 1,381,060	\$ 3,032,620	
2018	19	1,365	\$ 572,145	-	\$ -	752,083	\$ 218,309	\$ 1,499,413	2,168,017	\$ 769,164	2,073,249	\$ 267,470	-	\$ -	\$ 1,827,088	\$ 1,499,413	\$ 3,326,500	
2019	20	1,485	\$ 622,748	-	\$ -	814,428	\$ 236,406	\$ 1,623,709	2,465,717	\$ 874,781	2,202,059	\$ 284,088	-	\$ -	\$ 2,018,023	\$ 1,623,709	\$ 3,641,732	
2020	21	1,613	\$ 676,303	-	\$ -	879,905	\$ 255,412	\$ 1,754,249	2,799,697	\$ 993,270	2,333,081	\$ 300,991	-	\$ -	\$ 2,225,975	\$ 1,754,249	\$ 3,980,224	
total			\$ 6,065,992				\$ 2,358,519	\$ 16,199,028		\$ 7,096,391		\$ 3,123,403			\$ 18,644,305	\$ 16,199,028	\$ 34,843,333	
Note: Consumer Tax includes sales tax and hotel occupancy tax																		
Assumptions:				Source:														
Projection time frame				21 years City of Houston P&D assumption														
Ad valorem property tax rate				\$ 0.665 per \$100 valuation City of Houston														
Rate of collection				97% Harris County Appraisal District														
Homestead exemption rate				20% Harris County Appraisal District														
HISD Homestead ex amount				\$ 15,000 Harris County Appraisal District														
SF construction cost				\$ 100,000 per unit Conservative estimate based on Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average (\$159,926)														
MF construction cost				\$ 46,700 per unit Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average														
Retail/Service				\$ 45 per sqft Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average														
Office				\$ 55 per sqft Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average														
Industrial				\$ 20 per sqft Growth Indicators June/July 2000 April 2000 Year to Date Outside Loop Average														
Hotel				\$ 40 per sqft Based on construction costs of comparables for year 2000 (Comfort Inn, Ramada motels)														
Hotel room				600 sqft per room City of Houston P&D assumption														
Retail occupancy rate				90%														
Retail sales generated				\$ 221.52 per 1sqft														
Sales tax rate				1% City of Houston														
Hotel night rate				\$ 70 O'Connor and Associates														
Hotel occupancy rate				63% O'Connor and Associates														
Hotel occupancy tax rate				7% City of Houston														

APPENDIX E: Infrastructure Costs

1. Holmes Micro-Area

Table E1: Estimated Cost of Constructing Waterlines, Holmes Micro-Area

12" Water Lines	Map Units (1.5" = 1 mile)	Miles	Linear Feet	Cost
Buffalo Speedway	3	2.0	10,560	\$1,056,000
Kirby	7.5	5.0	26,400	\$2,640,000
288	5	3.3	17,600	\$1,760,000
Reed	4	2.7	14,080	\$1,408,000
Airport	5	3.3	17,600	\$1,760,000
Almeda Genoa	5	3.3	17,600	\$1,760,000
		Total	103,840	\$ 10,384,000

Conversion factors:

5,280 Feet/mile

\$100 /Foot for 12" water line

Table E2: Storm Water Lines Needed, Holmes Micro-Area

Storm Water	Map Units (1.5" = 1 mile)	Miles	Linear Feet
Buffalo Speedway	2	1.3	7,040
Reed	3	2.0	10,560
Orem	5.5	3.7	19,360
Total			36,960

Table E3: Estimated Cost of Building Waste Water Lines, Holmes Micro-Area

Waste Water	Map Units: 1.5" = 1 mile	Miles	Linear Feet	Cost
Buffalo Speedway	2	1.3	7,040	\$1,056,000
288 West Side	5	3.3	17,600	\$2,640,000
Furnam	5	3.3	17,600	\$2,640,000
Cost:		Total	42,240	\$6,336,000

\$150/Foot for 12" waste line

*Unless indicated, all pipes are 13 to 30"

Table E4: Estimated Cost of Building Roads, Holmes Micro-Area

Roads	Miles	Linear Feet	Cost
Reed (west segment)	1.8	9,504	\$6,652,800
Reed (east segment)	0.8	4,224	\$2,956,800
Airport (west segment)	2	10,560	\$7,392,000
Buffalo Speedway	1.6	8,448	\$5,913,600
Total		32,736	\$22,915,200

5,280 feet/mile

\$700 /foot of 4 lane major thoroughfares

2. Mykawa Micro-Area

Table E5: Estimated Cost of Building Waste Water Lines, Mykawa Micro-Area

Waste Water	Map Units: 1.5" = 1 mile	Miles	Linear Feet	Cost
Fuqua (31" plus)	4	2.7	14,080	2,112,000
Orem	3.5	2.3	12,320	1,848,000
Total			26,400	\$ 3,960,000

\$150/Foot for 12" waste line

*Unless indicated, all pipes are 13 to 30"

3. Cullen Micro-Area

Table E6: Estimated Cost of Building Water Lines, Cullen Micro-Area

12" Water Lines	Map Units: 1.5" = 1 mile	Miles	Linear Feet	Cost
Scott	1.75	1.2	6,160	616,000
Fuqua	8	5.3	28,160	2,816,000
Total			34,320	3,432,000

1.5 miles/inch

5,280 feet/mile

\$100/Foot for 12" water line

Table E7: Estimated Cost of Building Waste Water Lines, Cullen Micro-Area

Waste Water	Map Units: 1.5" = 1 mile	Miles	Linear Feet	Cost
Airport	5	3.3	17,600	2,640,000
Cullen	3	2.0	10,560	1,584,000
Total			28,160	4,224,000

\$150/Foot for 12" waste line

*Unless indicated, all pipes are 13 to 30"

Table E8: Estimated Cost of Building Roads, Cullen and Mykawa Micro-Areas

Roads	Miles	Linear Feet	Cost
Airport (east segment)	0.5	2,640	1,848,000
Orem (east segment)	2.6	13,728	9,609,600
Total		16,368	11,457,600

5,280 feet/mile

\$700/ft of 4 lane major thoroughfares

4. Additional Infrastructure Costs

Table E9: Estimated Infrastructure Expenses

288 to Mykawa (preliminary work and drainage)	16,000,000
Channelization of Sims Bayou	2,000,000
Sims Bayou Wastewater Treatment Plant expansion	5,800,000
Total	23,800,000

Table E10: Capital Improvement Program

<u>Project No.</u>	<u>\$ Amount</u>
(S-0610/CIP)	1,500,000
(R-0800/ CIP)	830,000
(N-0572 CIP)	4,500,000
(N-0622 CIP)	3,450,000
Total	10,280,000

5. Total Infrastructure Costs

Table E11: Total Infrastructure Costs

Area/Type	Cost
Holmes Road	\$39,635,200
Bellfort/Tellephone	NA
Mykawa/Cullen	\$19,113,600
Other Infrastructure Expenses	\$34,080,000
Total	\$92,828,800

6. Expansion of Sims Bayou Treatment Plant

Sims Bayou wastewater treatment plant service area covers 44 census tracts from Buffalo Bayou in the North to Clear Creek in the South. Holmes Study Area is totally within this service area, while only one census tract (34,000) of Cullen Study Area is in the service area.

According to Scenario 2 projections, Holmes would add about 3,300 and Cullen about 1,000 new population to the Sims Bayou plant service area. In addition, 9.5 million square feet of non-residential space would be added as well.

In 2010 the plant, holding a capacity for processing 20 MGD of wastewater, is projected to work at 93 percent capacity, 3 percent more than permitted by TNRCC. With a shortfall of .513 MGD, an expansion of 1 MGD was proposed. However,

Scenario 2 projections would demand to increase capacity to 1.5 MGD more than the calculated shortfall by 2020. Taking into account both shortfalls ($0.513 + 1.5 = 2.013$ MGD), the plant must be expanded by 2.013 MGD (and not by 1 MGD) at least to accommodate growth in the Holmes and Cullen areas.

At \$2.8753 average capacity cost per gallon, the plant expansion would be about **\$5.8 million dollars**.

Sims Bayou Wastewater Treatment Plan Capacity Calculations

- Permitted ADF: 20,000,000 gallons per day
 - By 2010, projected shortfall of .513 MGD
 - By 2020, projected shortfall of 1.5 MGD
 - Holmes and Cullen increase population by 2020 under Scenario2:
 - 1,663 households
 - 1 service unit = 315 GPD
 - Residential consumption= 1.0
 - 50,000 Sq.Ft. retail = 0.0002 service units per unit
 - 200,000 Sq.Ft. office = 0.0003 service units per unit
 - 100 unit apartments = 0.71 service units per unit
 - Average Capacity Cost (\$/gallon): 2.8753
-

Sources:

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APPENDIX F: Micro-Areas Population and Employment Shares in the Houston Metropolitan Area

Scenario 1 assumes that current land uses, population and employment trends will continue until 2020.

Scenario 2 assumes that with government intervention in infrastructure improvements and revitalization, land use, population and employment trends will be modified.

Table F1: Total Population and Employment Share of Southern Houston Micro-Areas (with current trends and with government intervention)

Scenarios	Population Share in Metro Area 1999	Employment Share in Metro Area 1999	Population Share in Metro Area 2020	Employment Share in Metro Area 2020
With current trends	1.20%	0.96%	1.40%	1.50%
With Gov. Intervention		1.20%		1.80%
	Population Share in Southern Houston 1999	Employment Share in Southern Houston 1999	Population Share in Southern Houston 2020	Employment Share in Southern Houston 2020
With current trends	20.5%	18.8%	33.2%	34.0%
With Gov. Intervention		22.9%		41.5%

Table F2: Total Population and Employment Shares of Southern Houston in the Houston Metropolitan Area

Scenarios	Population Share in Metro Area 1999	Employment Share in Metro Area 2020	Population Share in Metro Area 1999	Employment Share in Metro Area 2020
With current trends	5.7%	5.1%	4.1%	4.2%
With Gov. Intervention		6.3%		6.0%

Table F3: Population Growth in Southern Houston Micro-Areas, 1999-2020 (Scenario 1 and 2)

Micro-Area	1999 Base	Scenario 1 (2020)		Scenario 2 (2020)	
	Total	Total	Percent Growth	Total	Percent Growth
Holmes	1,674	2,985	78%	5,000	199%
Mikawa	1,225	2,436	99%	3,600	194%
Cullen	43,895	46,568	6%	54,304	24%
Telephone /Bellfort	4,888	5,137	5%	6,747	38%
Total	51,682	57,126		69,651	

Table F4: Employment Growth in Southern Houston Micro-Areas, 1999-2020

Micro-Area	1999 Base	Scenario 1 (2020)			Scenario 2 (2020)		
	Total	Total	Growth	Percent Total	Total Growth	Growth	Percent
Holmes	15,416	23,323	7,907	51%	27,748	12,332	80%
Mikawa	6,377	8,696	2,319	36%	9,600	3,223	51%
Cullen	7,352	8,146	794	11%	9,187	1,835	25%
Telephone/Bellfort	2,105	3,166	1,061	50%	6,331	4,226	200%
Total	31,250	43,331	12,081		52,866	21,616	

Table F5: Population and Employment growth in Southern Houston

	1999 Base	Scenario 1 2020	Scenario 2 2020
Population	251,971	303,551	373,202
Employment	94,066	127,291	180,157

Source: Derived from HGAC projections

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